The Changing Rural Geography of Scottish Lowlands (1700-1820) A Study of Changes in Landscape and Economy, as Revealed for Certain Regions by Contemporary Estate Plans and Papers, and Examples of the Enduring Effects. A Critical Selected Bibliography of Estate Plans.

Thesis

presented by

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INTRODUCTION.

We are accustomed, in this age, to regional planning, undertaken in conformity with the requirements of a national planning act, by experts whose chief concern is to plan for the general good. A severe simplicity of line is dictated by economic necessity, and a desire to achieve fitness for purpose, rather than ostentatious show. Quite otherwise did the prosperous and ambitious Victorians embellish and decorate the works of their hands. It may be said that their excesses were a development from an earlier period of pretentious design, initiated in Scotland in the eighteenth century, when the landowners, becoming better acquainted with their more elegant English neighbours, awoke to a new sense of their dignity, as well as to the wretchedly backward and barren condition of their country.

The "improving" lairds sought to surround themselves with a gracious seclusion, to cloak their parks and the whole bleak countryside afresh with trees, and to reduce to the trim order of the new system of husbandry the chaotic fragmentation and disorder produced by the breakdown of the runrig system. They enlarged and beautified their mansions, and laid out impressive and artistic "pleasure grounds", using models from England, France, or even ancient Greece and Rome. Some zealous architects did not hesitate to emulate the very gardens of

Versailles, or to construct Norman towers and even ruins, to give romantic flavour, where genuine historic ruins were lacking. At the same time, full credit must be given to them for effecting tremendous improvement in the appearance and agricultural condition of Scotland, notwithstanding the fact that the increased productivity enabled them to carry out their elaborate designs. With their financial backing, farms were prepared for the adoption of the new systems of husbandry, settlements and roads were altered, and indeed the whole appearance of the countryside was changed to accord with the new order and ever-widening horizons. Consequently our country came to be planned by as many planners as there were estates, each laird with his own ideas and motives, and almost inevitably, with his own interests foremost in his mind. It seems, therefore, if a proper understanding is to be gained of the significance and progress of the enclosure movement, and of its repercussions on countryside and people, that it is not sufficient to study merely the general operation of regional geographical and historical factors. Account must be taken of the personal and individualistic nature of the operations, and the most objective information available must be sought, about conditions obtaining on each particular estate.

The most graphic documents to be found amongst eighteenth century estate papers, relative to this subject, are detailed plans drawn of individual farms, groups of farms or of entire

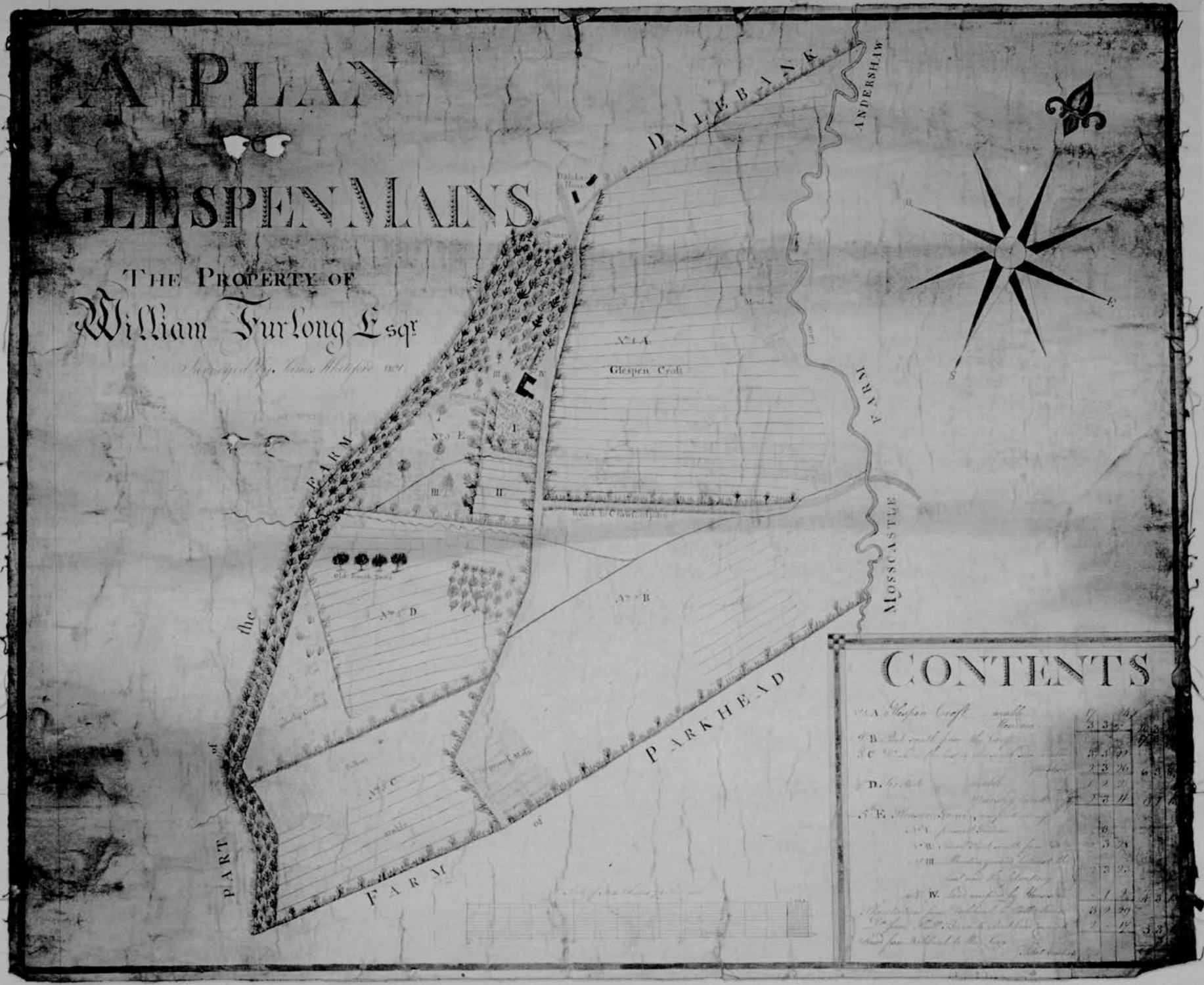
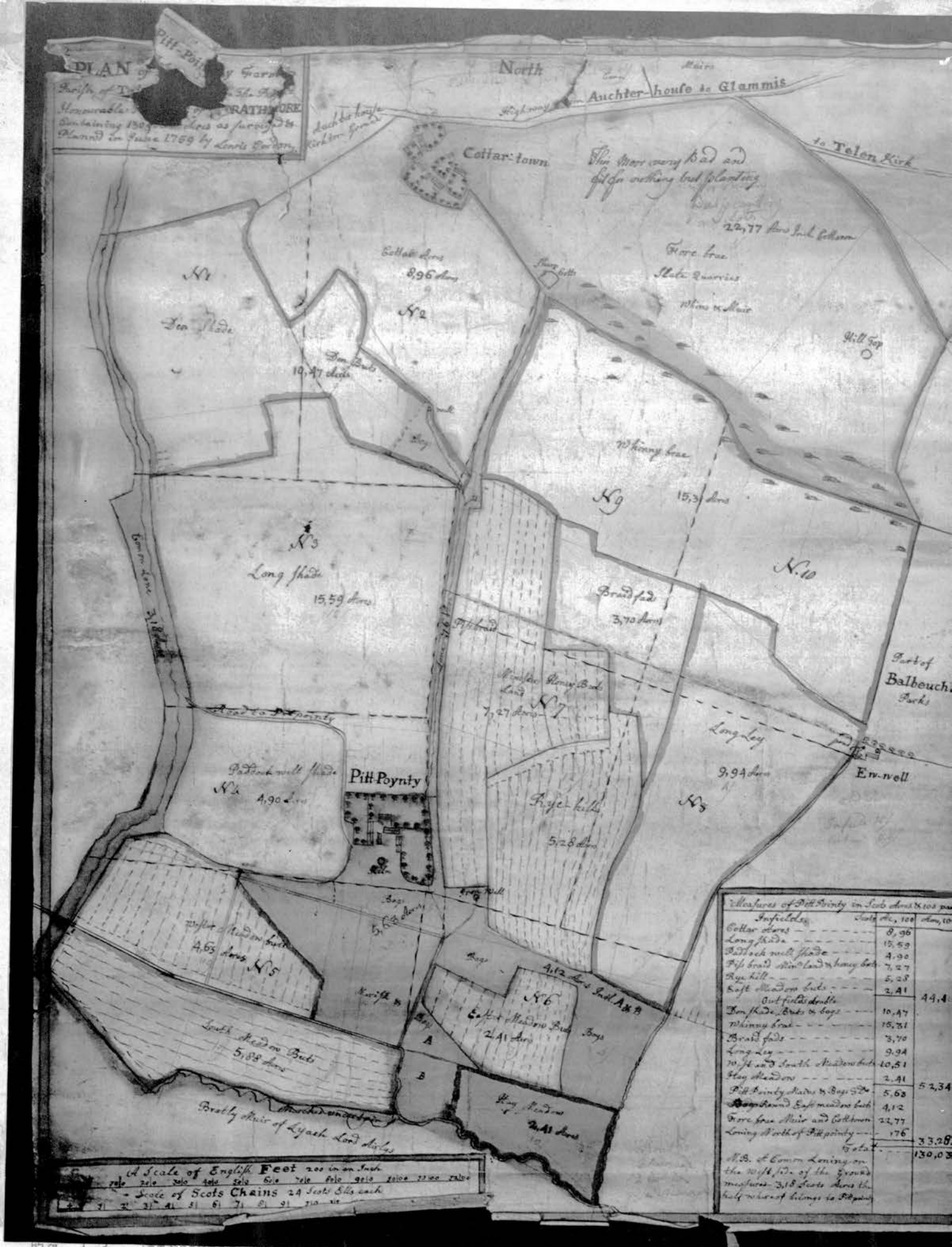


Fig. I.1. Glespen Mains, Crawfordjohn, Lanarkshire. Premature enclosure.



Measures of Pitt Pointy in Scots Acres & 100 parts		
Infields	Scots Ac, 100	Acres, 100
Cottar Acres	8,96	
Long Shade	15,59	
Pattock mill Shade	4,90	
Pitt broad Acre Land & Whinny Brae	7,27	
Rye hill	5,28	
East Meadow Buts	2,41	44,41
Out field Arable		
Fore Shade, Buts & Bogs	10,47	
Whinny brae	15,31	
Broad fads	3,70	
Long Ley	9,94	
W. & S. South Meadow buts	10,51	
Hay Meadow	2,41	
Pitt Pointy Shades & Bogs &c	5,63	52,34
Bogs Round East meadow buts	4,12	
Fore brae Muir and Cottown	22,77	
Loning North of Pitt pointy	176	
Total		33,28
		130,03

N.B. A Common Loning on the West side of the Ground measures 3,18 Scots Acres the half whereof belongs to Pitpointy

Fig. 1.2. Pitpointie Farm, Auchterhouse Parish, Angus

estates, after survey which usually took place as a preliminary to enclosure. Accompanying some collections of plans, especially those pertaining to the larger estates, may be found a detailed report on the condition of the estate, with suggested improvements, written by the surveyor, by an adviser appointed by the landlord, or by the landlord himself. Estate rentals supplement the information shown on the plans, and indicate numbers of tenants to each farm, amounts of rent paid and the manner of payment, as well as duration of leases. Changes which came about as enclosure proceeded are recorded in these yearly statements, and the facts as well as the remarks in parenthesis, reveal something of the relationship existing between landlord or factor, and tenant.

The estate plans collectively represent different stages in the process of enclosure, because not all were drawn before enclosure began. Enclosures may be seen newly completed on some plans, often without any concomitant improvement of the land, while on others, usually of considerable interest, the proposed enclosure grid is superimposed in the detail of the pre-enclosure landscape. (See Figures I1 and I2). Plans drawn at a transitional stage may illustrate well the striking contrast which must have existed between regularly enclosed sections of farmland, and those as yet untouched. (See Figure I3). Those plans which portray merely the unenclosed and unimproved landscape, although revealing nothing of the changes

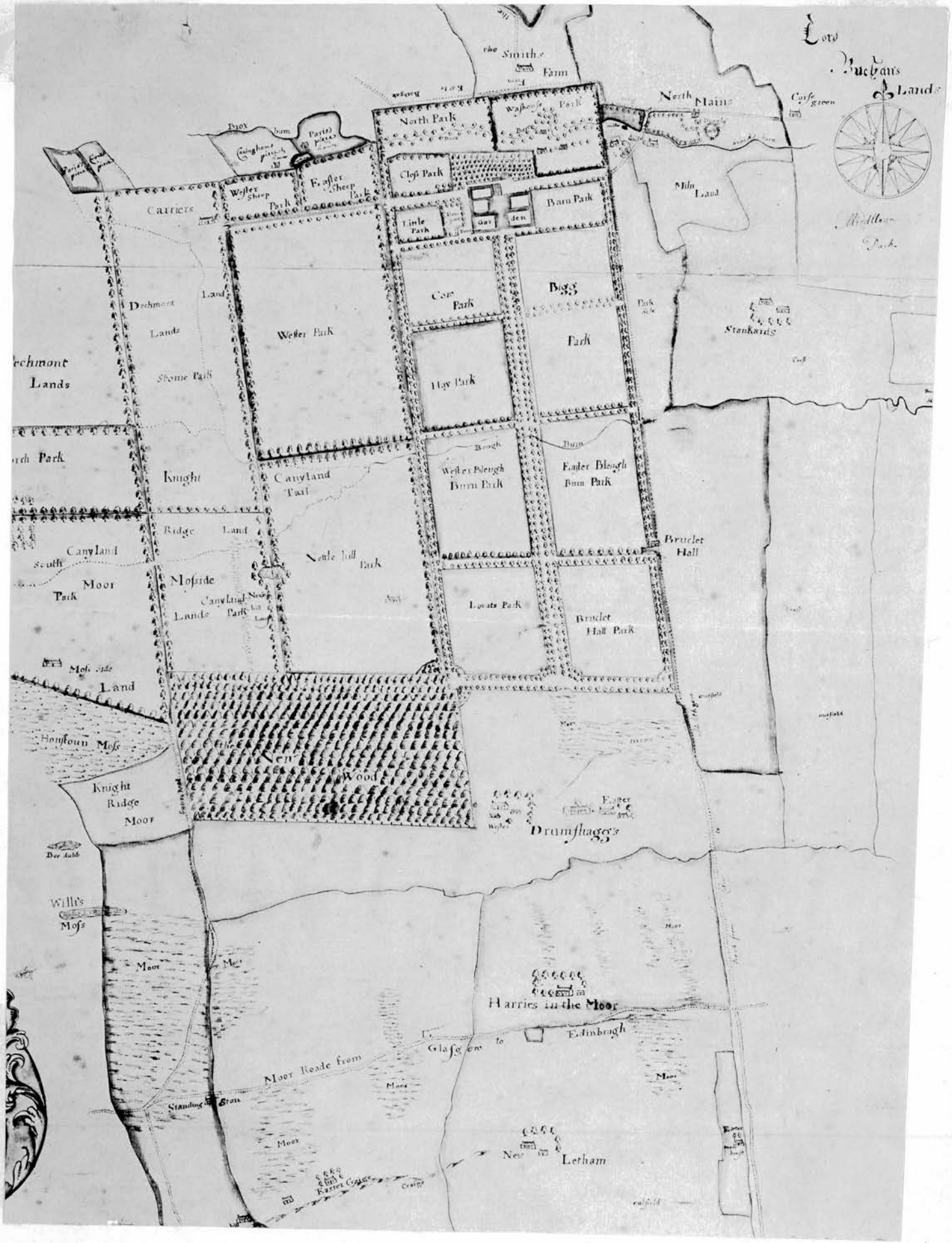


Fig. I.3. Houstoun Estate, Uphall Parish, West Lothian.
An estate partially enclosed. 1759.

to come, are of themselves documents of great intrinsic value. In them we have, preserved, a unique, detailed and remarkably accurate record of a landscape which was the end product of centuries of slow evolution, and which was about to be obliterated. As through a magnifying glass, we may glimpse each cottage and its yard, a haystack or a lone and conspicuous tree, even the smallest rig. The adaptation of field and farm patterns to topographical features may be studied, as also the disposition of settlements - of mansion, kirktown, milltoun or fermtoun, and of roads - which in turn reveal human relationships and the bounds of each inter-dependent community.

Estate plans were drawn for utilitarian purposes, and naturally many lairds were content with the products of an initial survey of the unimproved estate and of a subsequent survey, undertaken perhaps in the early nineteenth century, showing the enclosure completed. Only on large estates such as those belonging to the Dukes of Hamilton, were plans drawn at frequent intervals during this changeful time. Many estate collections are moreover far from complete, and others are no longer extant. Thus it frequently happens that one plan only, representing a particular period may exist for a farm or estate, and that plans available only for scattered farms or estates are of varying dates and show varying stages of progress. On the other hand, some of the larger estates

have most comprehensive collections of plans, rentals, reports, and other documents, extending from the late seventeenth century to the early nineteenth century, and these furnish detailed information about estate affairs throughout the entire period under review. Many of the plans of isolated farms and small estates, though scattered throughout the regions selected for study, are extremely informative and interesting, and it is felt that a sufficiently representative number of each type, and at each stage, has been examined to justify not merely the study, estate by estate, of the enclosure movement and its repercussions, but also consideration of the regional evolution of landscape and economy from the time of the earliest stirrings of the Agricultural Revolution in the first half of the eighteenth century, to its virtual completion in the early nineteenth century.

Whenever available, relevant estate papers have been consulted, but although rent rolls, factor's accounts, reports and similar documents, give a faithful account of estate affairs, they were written for purely contemporary perusal by the landlord and his staff. Thus if a broad understanding is to be gained of factors which had considerable bearing on the course of the Agricultural Revolution in a particular region, other contemporary works must be consulted. The most objective of these are the County Surveys which were undertaken on behalf of the Board of Agriculture at the end of the eighteenth century and beginning of the nineteenth century. Of value also

are the volumes written by Andrew Wight, an East Lothian farmer, on the "Present State of Husbandry" in Scotland. These were based on actual surveys made by Wight during the seventeen-seventies and eighties, on behalf of the Commissioners of the Annexed Estates, by whose authority they were published. The Old Statistical Account is a mine of information. The ministers who wrote the parish accounts as well as some of the county surveys were frequently enthusiastic and expert farmers, some of them in possession of considerable acres, in addition to their glebes. It must be noted that sometimes rightly and certainly sometimes wrongly, a minister might find himself involved in a law suit with a tenant farmer or with his laird, and therefore remarks made in parish accounts may occasionally be coloured by strong personal feelings.

The aim of the research work undertaken on this subject is two-fold. There is, in the first place, a need to locate and catalogue the great numbers of estate plans, which are still in the keeping of landowners or their agents, and are consequently scattered throughout the country. With the desirability in mind of ensuring the preservation of estate plans, and securing a catalogue of them, to be made available to students, the Council of the Royal Scottish Geographical Society set up a special committee on Old Estate Plans. This committee appointed the writer to be the active worker on its

R.S.G.S. Old Estate Plans — County Midlothian.

Parish Ratho. — Year 1749. — Estate Dalmahoy

Title A Plan of the Estate of Dalmahoy Without the Inclosieurs, Consisting of the Lands of Dalmahoy, Newhouse, the Haggs and Burnwyne

Surveyor or Draftsman Thos Winter — Condition of Map Good

Location (a) Original D. J.H Campbell. WS. 31. Moray Pl. Edin. (b) Reproduction –

Scale of Original 1 inch to 4 chains Scots to Imp.

Approximate size of (a) Original 29" x 35" (b) Reproduction –

Number of Sheets 1 — Whether Coloured (a) Original yes/~~no~~ (b) Copy ~~yes~~/~~no~~

Data Shown:—Distinctive Landmarks Dalmahoy Hill.

Buildings yes/~~no~~ — Roads yes/~~no~~ | Dalmahoy Tofts. Old fortification.

Farm Boundaries yes/~~no~~ — Other Features Runrig terms. Crott. Infield. Riggs. 'Riskie Pasture"

Field Boundaries yes/~~no~~ — Additions or Changes and Date –

Field Acreage yes/~~no~~ — Whether mentioned in MS. Morton Papers. Register House.

Total Acreage 604 Scots — Whether reproduced therein yes/no?

Field Names yes/~~no~~ — Whether Rent Roll available. None has been discovered

Land Use yes/~~no~~ Some indication. Land Holdings yes/~~no~~ Whether a Table of Contents yes/~~no~~

Percentage of Land Enclosed None

Whether Runrig shows:— Proportion in Runrig

(a) Portions of Estates ~~yes~~/no (a) –

(b) Tenants' Holdings yes/~~no~~ (b) 100 %

Period of Enclosure—whether before Actual Agricultural Revolution ~~yes~~/no

Estimate of Interest A.B.C. From Pre-revolution Landscape, Stage of Transition in Land Use and Apportionment, or in Settlement Form A

Reporter Retrigmented.

Date May 8th. 1951.

Fig. I.4. Specimen showing the two sides of the index card.

behalf, and the work of cataloguing was begun in 1950. The advice of the committee, which includes geographers, historians, librarians and other interested people, was sought with regard to the choice of a suitable indexing system, and the arrangement of data relative to the plans. It was agreed that a "sorting" index card of the Copeland-Chatterson Co. Ltd. should be adopted, and that the card should be printed in the manner shown on the opposite page. (Figure I4).

During the period of research about three hundred and fifty estate plans have been catalogued. Most of the plans are of estates in the Lothians, Lanarkshire, Angus and Kincardineshire, but where collections were found containing plans of estates in other counties, these have been included, so long as the number was not large. The Royal Scottish Geographical Society and the Signet Library hold small collections of plans, and these have been examined, as well as a number of the plans to be found in H.M. Register House. More than fifty landowners or agents have been approached, but not all of these were in possession of plans. The Royal Scottish Geographical Society is in possession of the complete critical bibliography, which is housed in their Library. Lists have been made from the catalogue, of estate plans relative to the regions selected for special study - namely Strathmore, Clydesdale and a section of the Lothians - and these are included with other documentary sources. For each plan the

following data has been listed: Estate, Parish, Title, Surveyor, Year, Percentage Enclosed, and Interest Value.

The main object of this thesis is to depict faithfully the changing rural landscape of eighteenth century Scotland as observed in certain rural districts, and from detailed studies of individual farms and estates, to gain some understanding of the complex forces underlying the changes, of the actual processes at work, and of effects and repercussions on both countryside and people. Our present structures, for all their efficiency of construction and the seeming permanence of reinforced concrete, continue to change, and such must surely be the fate of any humanised landscape. The evolution of the landscape prior to the Agricultural Revolution has added interest and significance in that development was in a sense, more unconscious and uncontrolled, and features of the countryside were more easily eradicated or altered than they are to-day. Fields were not held within a rigid framework of enclosure, cottages were by their construction ephemeral, roads mere tracks that might be altered with ease, and yet cognizance was taken of every foot of farmland by its jealous possessors. It is hoped therefore to discover, by taking the farm as the agricultural unit and rig as the basis of the runrig system, the adaptation of rig, field, farm shape and acreage, and settlements, to local topography and other geographical conditions, the relationship existing between

tenant and farmland, between co-tenants, and tenant and laird: withal to discover, if any, the degree of evolution from the original movable runrig, and if possible, how the consolidation of fragmented and scattered holdings was effected. Implicit in the matter of the break-down of runrig are problems of the relationship between population and available land. After detailed analysis, it is hoped to discover how far the operation of regional factors allows local generalisations to be made, and how far it caused significant differences in widely separated regions of Scotland. It may moreover be possible to determine whether such terms as ploughgate or oxgate still retained their original significance and still were operative.

The Agricultural Revolution, for all its planning, was a hasty introduction of something new, born of fresh and exuberant ideas and theories. It is essential to understand the prevalent doctrines and common aspirations of the times, and interesting to watch necessary adjustments being made, the inevitable experimentation with new ways, and ambitious projects being energetically undertaken at a time when money and supply of labour were commonly plentiful. The policies of lairds with regard to enclosing, dealing with tenants, and changing the system of husbandry, will be examined, as well as the validity of various criteria commonly employed to assess progress made in improvement of husbandry or land in any

particular region, at this time. The establishment of new farm "patterns", and the new distribution of settlements and population, as a consequence of enclosure, will be investigated, as also the linking up of the planned sections of contiguous estates, the breakdown of the small almost self-contained community, and the establishment of a more regional type of economy, with more standardised systems of husbandry. It is not within the scope of this treatise to trace consistently the development of districts up to the present day, and except in a few instances, no attempt is made to give a connected account. Space does not permit detailed treatment to be made of the effects of eighteenth century developments on present rural geography, but maps and tracings made from the plans when compared with modern maps on the same scale, enable comparison to be made, and indicate the extent to which changes effected in the eighteenth century are still operative.

Originally it was intended that subject matter should be culled from each of the estates which have been covered, in the Lothians, Strathmore and Clydesdale, but it was seen that this was too large an undertaking. The examination of plans and estate papers for a considerable estate in some instances took months. In the Lothians, estates which besides having collections of plans, had also available rentals or other estate papers (sometimes in quantities), were those of

Penicuik (Sir John Clerk), Dalkeith (Duke of Buccleuch), the estates of the Earl of Wemyss, in East Lothian and Midlothian, Riccarton (Craig family originally), Dalmahoy (Earl of Morton), Newliston (Major Hog), and the estate of the Don Wauchope family, near Dalkeith. For this region it became necessary to be either very general or selective, and the latter alternative was chosen. A detailed account has been given of the development of the estate of the Clerks of Penicuik, because this estate furnished the most complete and comprehensive collection of plans and other documents. Reference will however be made to photostats and other material relating to estates in the Lothians, in general discussion.

Although a considerable number of plans and some family papers pertaining to estates in Clydesdale have been examined, the quantity and value of the plans and documents in possession of the ducal family of Hamilton, eclipses the rest. It has therefore been decided to concentrate mainly on the development of the Hamilton Estate, using information drawn from other estates, unless of outstanding interest meriting detailed exposition, for purposes of contrast and comparison, and for forming, along with contemporary accounts of conditions prevailing generally in Clydesdale, a suitable background for discussion of the extensive Hamilton estates. It may be noted that unfortunately a large and most interesting collection of plans and papers relating to the Douglas Estates in Lanarkshire

arrived recently in Edinburgh, too late for consideration of more than the plans.

Glamis Castle Charter Room proved to be by far the most valuable source of documentary information about the condition of Strathmore in the eighteenth century, and about the improvements effected by John, ninth earl of Strathmore, and his successor. In this region, however, a number of estates, such as that of the Earl of Airlie, yielded plans and papers of extraordinary interest. It has thus been decided to write a general chapter on the development of Strathmore in the eighteenth century and add two chapters of Appendix based on the documents found at Glamis.

The Plans.

The search for estate plans and the indexing of them may be beset with difficulties and discouragements. Although, almost without exception, landowners and their factors were found to be most charming, interested and accommodating people, they were usually far from being gentlemen of leisure, and many of the landowners especially, are quite unaware of the existence or whereabouts of estate plans. Thus prolonged correspondence may arise with factor, law agents, old retainers, and others likely to know about the desired plans. When the landowner does produce plans from Charter room, attic or cellar, he is commonly so interested in his discovery that work proceeds

concurrently with conversation, which although agreeable and often informative, rather hinders progress. Sometimes due to the necessity of catching a bus and to the cordial hospitality of host and hostess, it has been possible to index only a few of the plans examined, and necessary to leave uncatalogued, plans which were too cumbersome to carry or post. Although estate plans may be as small as twelve inches square, numbers of them are four, five or six feet long, and the largest one examined, which was also one of the most interesting, was about fifteen feet long and six feet broad. It has thus often been a problem to find a suitable table on which to unroll plans, and on one occasion the only suitable place was the floor of a draughty garage. Factors are usually methodical about the disposition of plans, but sometimes plans of all dates are kept together. In one instance two days were spent unrolling tightly-rolled plans from a bundle three to four feet high, and searching an attic for relevant papers. In another large estate office someone recollected, after a week's work on a small collection of plans had been completed, that there was a large bundle of old plans in a room that had been missed out when the office was searched. Thus the evening before departure was spent sorting these out for despatch to Edinburgh. Cold is a factor that has to be reckoned with in charter rooms, estate offices and law offices, because many are old-fashioned and have inadequate heating in rooms not constantly in use. Where estates have changed hands it is sometimes difficult to discover the law office in possession of plans, and lawyers are very busy

people. Occasionally there was some suspicion, especially amongst custodians of plans, about motives prompting enquiry, in spite of the reception of an explanatory circular letter. Although from the point of view of the plans, results of enquiry might be tantalising or frustrating, the personal enjoyment of each venture was considerable, and the discovery of an interesting plan a source of delight.

The situation with regard to rentals, reports and other documents was similar. Occasionally a landowner would be positive that he had no rent-rolls, until he was shown a row of them on a shelf in his library. The condition of some charter rooms is rather chaotic, and therefore with a short time only at one's disposal, it is largely a matter of chance whether anything of significance is discovered.

On the other hand there are lairds who take a pride in their old plans and have them framed on their walls, who not only know about their family papers, but also have an intimate knowledge of the estate history. There are few who can make no comment about eighteenth century and subsequent changes in their respective estates.

The earliest collection of plans which has been catalogued, is dated 1718, and comprises a series of plans drawn for a Duchess of Buccleuch, of her estate at Dalkeith. After that date there is a gap in time until the forties are reached, and plans of that date are infrequent. The number increases in the

following decades, and the seventies probably represents the peak period in production of plans, due to the stimulus provided by an Act passed in 1770 to encourage the improvement of land held under settlements of strict entail. In some districts, such as the glens of Angus, estate plans showing partially unenclosed or newly enclosed lands were being drawn in the 'twenties and 'thirties of the nineteenth century. Occasionally a plan of later than that date has been catalogued, if it indicates continued existence of old practices, or is of interest in connection with an earlier plan.

There was no stipulated legal procedure connected with the enclosure of land in Scotland, and estate plans are certainly not stereotyped as regards scale, appearance or content. At one extreme is the bound volume of plans, usually in a good state of preservation, and bearing the name of an eminent surveyor. Individual farm plans are expertly and artistically executed in colour and print, with competent tables of contents. At the other extreme are loose plans drawn on flimsy paper, and usually torn and dusty. Some of them show good workmanship, but some are strictly utilitarian, even careless in appearance, uncoloured, and annotated in scrawling faded longhand. Commonly the plans were backed with linen and bound, or fastened to rollers. A receipt dated 1771 was found amongst the Glamis collection "For Drawing paper, Cloth and Binding for the Plan

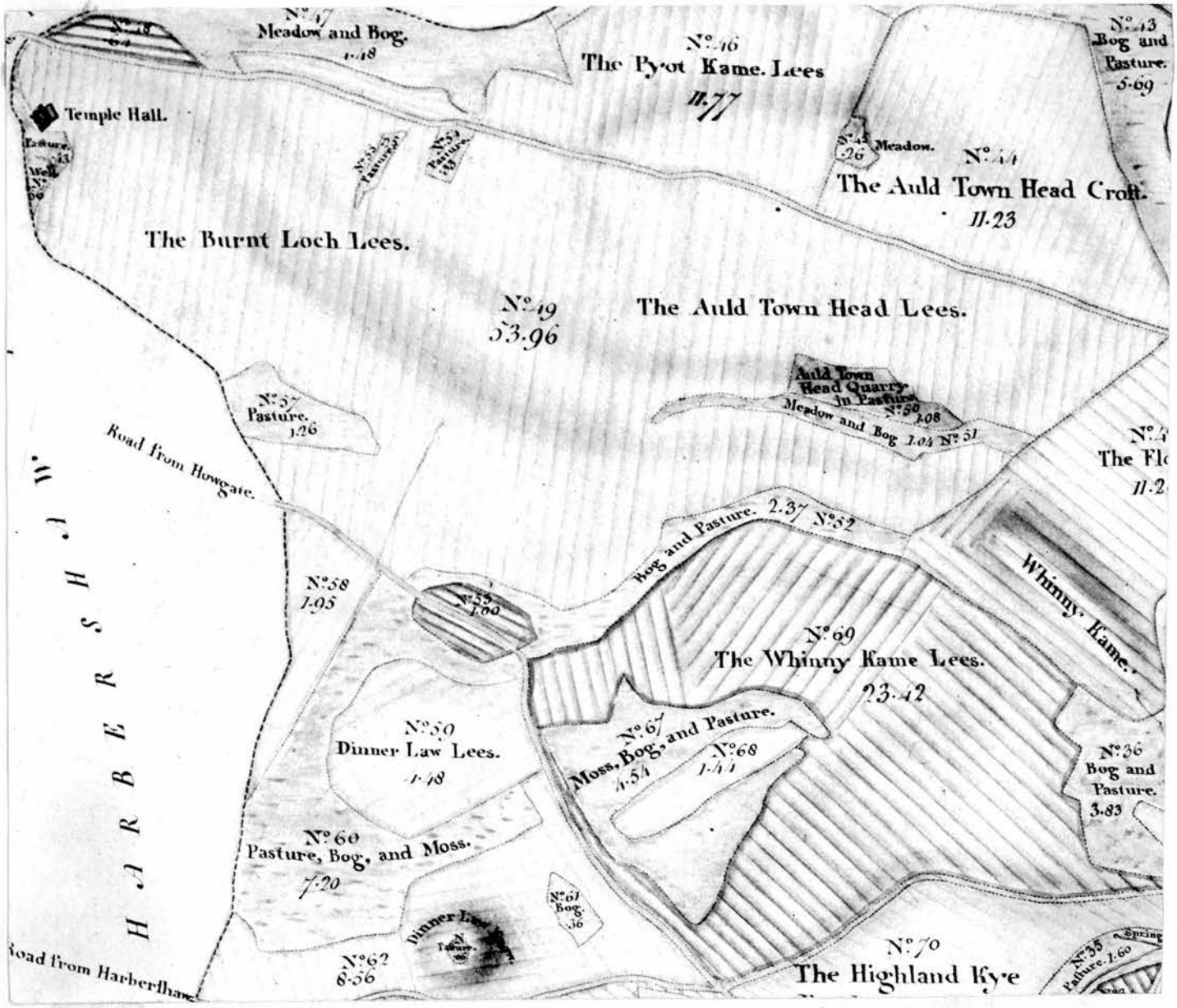


Fig. I.5. Indication of topography by shading, on the estate plan of Mountlothian, Penicuik Estate, Midlothian.

of the Farm of Ballgownie, 2/10d."

No matter the manner of presentation, it has usually been found, when boundaries or data were being transferred to tracing paper on top of the modern 2½ inch ordnance survey maps, that detail and proportions were reliable. The very large plans previously mentioned might represent whole estates on various scales from 16 Scots chains to an inch (about 3½ inches to an Imperial mile) to 4 Scots chains to an inch (about 18 inches to an Imperial mile). A plan of Douglas-dale dated 1769, measuring fifteen feet by six feet six inches was drawn on the scale of an inch to six Scots chains. Farm plans usually vary between an inch to two chains and an inch to eight chains, the most usual size being an inch to four Scots chains. It is unusual for eighteenth century plans to be measured in Imperial chains. The amount of detail varies from plan to plan, not merely according to scale. Thus on some plans every rig is drawn accurately with the possessor's name marked on it, and the possessions of each tenant coloured distinctively, while on other plans the disposition of rigs is indicated merely by diagrammatic lines, or may not be indicated at all. Arrows may be used to indicate direction of slope, and hachures, or shading to give an impression of topography. (See Figures I5 and II3$_{p4}$). Infield and outfield, field names, field boundaries, farm boundaries, and acreages may or may not be indicated, but usually there is some indication of acreage in a table of

Fig, I.6. Wellston, Penicuik Estate.

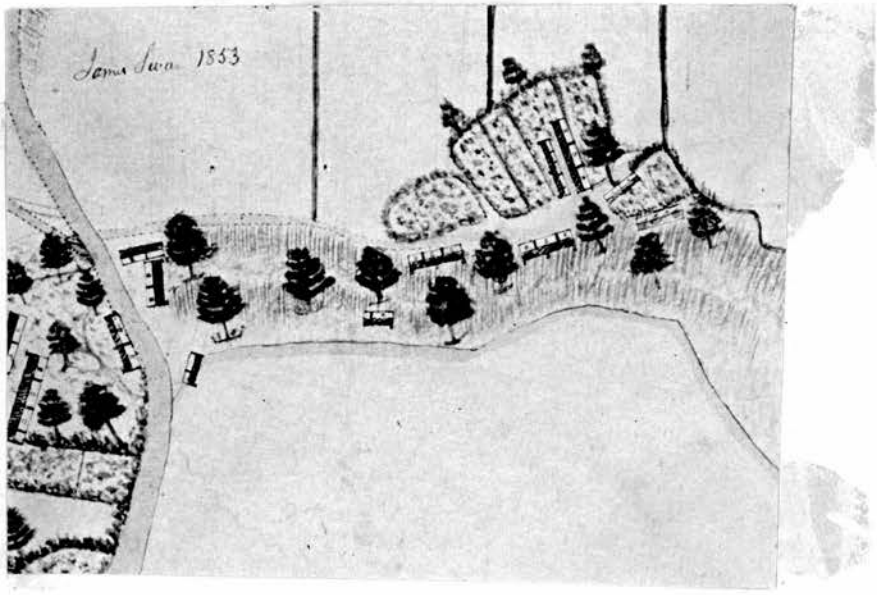


Fig. I.7. Uddington, Douglas Parish, Lanarkshire.

Fig. I.8. Taken from a book of plans of Douglas Estate.

contents. Buildings and such features as hedges, trees, haystacks, bogs and meadow are often shown symbollically (See Figures I6 and I7). Roads usually are marked, and quarries, kilns, drains, antiquities and even erratic boulders may be shown. Comments may be made upon the condition of land, such as "Moorish Pasture", "Clay Soil", "Poor Outfield Many Baulks", "Vastly Stony", "Infield, nearly two-thirds pasture interspersed" "Outfield, taken in out of the Moor" - to quote actual examples. Although titles, compass-points and other subsidiary details sometimes appear to be unduly decorative, the drawings of scenery, farmsteads, livestock and farm implements, that frame the title, may be illuminating. (See Fig. I8).

The role played by the surveyors was a most significant and responsible one, because they were often not merely surveyors and draughtsmen, but also advisers on matters of enclosure and improvements, and administrators of the actual work undertaken. English specialists were sometimes employed, especially during the early stages of the enclosure period, and Scottish surveyors commonly had practical experience of English methods. An English farmer-specialist named Thomas Winter came in 1726 to Monymusk Estate to act as an adviser there, and it may be that he is the Thomas Winter who produced excellent estate plans between the years 1746 and 1760, in such diverse counties as Inverness-shire, Perthshire, Midlothian, Angus, and Stirlingshire[1]. He used compass and rule, theodolite

1. H. Hamilton. Selections from the Monymusk papers, 1713-55. Scottish History Society, 1945, Introduction, p. 47.

and chain, in his survey of Monymusk[1]. Eminent and capable surveyors, such as John Ainslie, William Crawford, William Bell, John Leslie, and Lewis Gordon, whose names figure prominently on plans of the Lothians, commonly undertook work, especially on large estates in counties far distant from Edinburgh. It is probable that the surveyors were mainly responsible for the production of one distinctive type of plan, namely a design for the improvement of policies. These "Designs for Improvement" were of widespread occurrence and bore striking similarity to each other in conception and manner of presentation. They were highly-coloured grandiose designs usually drawn to a large scale on substantial linen-backed paper, and mounted on wooden rollers. In an openly proclaimed endeavour to create a setting befitting the station in life of his estimable employer, the surveyor gave full rein to his imagination. An enlarged and improved mansion-house, sometimes completely rebuilt on a new site, is shown in a setting of extensive parkland, with gracious spreading trees, ornamental ponds and cascades, grottoes, towers and statues. Curving drives approach the main door, and long tree-lined avenues provide sweeping vistas, while lawns, formal gardens, and orchards grace the precincts of the mansion. Faint dotted lines show existing features, which are to be swept away - the outlines of the mains farm and other possessions, and of clustered settlements destined to vanish or be removed to a

1. Op. cit., Introduction, p. 68, Monymusk Papers.

discreet distance and camouflaged with trees. On large estates these designs might become a reality, but partial fulfilment was usually the case where smaller estates were concerned, or inspired by the design, a laird might on his own iniative lay out a more moderate and appropriate setting for his mansion, of lawns, gardens and enclosed parks. It has also happened that landowners themselves were directly responsible for elaborate schemes of policy embellishment. When everyone is planning impressive wonderlands, it is as well to be thorough, and most of us admit to a delight in the fanciful and romantic.

One type of plan, which is not specifically an estate plan, must be mentioned. Plans which were drawn to show the course of new roads, or to illustrate the point of a legal dispute, often indicate also the condition of adjacent farmland, and where of sufficient interest, they have been included in the catalogue.

Cartographical Methods.

The uncoloured edition of the one inch to a mile ordnance survey map was chosen for indexing purposes, because the sheets are large enough to cover a considerable area, and because the maps are sufficiently detailed for farm or estate boundaries to be plotted with some degree of accuracy. A system of colouring and shading has been adopted, so that the period during which each plan or set of plans was drawn may be indicated, as well

as the amount of enclosure shown. Since the scales employed for this may vary slightly from region to region, it has been decided to leave discussion of the index maps to the chapters dealing with particular regions.

For one reason or another it is impossible to have all estate plans photographed, and moreover a number of them do not merit such attention. It was thus decided to develop some system whereby significant data shown on estate plans might be plotted in a form which would permit a connected record to be made of conditions obtaining in any district, particularly with regard to settlements, farm boundaries, and roads, and which might be compared easily with present conditions shown on an ordnance survey map. The most convenient modern map for purposes of comparison is that drawn on the scale of approximately two and a half inches to the mile. Sheets are sufficiently large to include moderate estates, and settlements, field boundaries, and different classes of road, as well as natural features, are clearly shown. Tracing paper was laid accordingly on top of any required sheet, and detail shown on the estate plans applicable to that sheet was reduced to the scale of two and a half inches to the mile, and entered on the tracing-paper. This might be a simple process but just as often it was laborious. A number of plans were not orientated, and the title might give no indication of location, other than the name of the farm. Clues were sometimes

Key to symbols used on tracing sheets

Symbols used on 2½" Tracing Sheets.

+ Church..
⊘ Mill.
M Mansion.
V Village.

F Fermtoun.
+F Kirkton.
⊘F Millton.

A steading replacing a fermtoun.
□ A steading on a new site.

△ Cottage of smallholder,
△△ crofter or cottar.
Group of two or three cottages.
△△△ Cot-town.

The underlining of a symbol shows continued existence.

___ Policy or estate boundary.
_ _ Farm boundary.
____ Proposed farm division.

Road no longer in existence.

Section of road shown on plan, still in existence.

Road shown on plan, now a minor road or path.

Cr. Croft or Infield.
Marsh.
Rough pasture.

The acreage of each farm is shown in brackets, after the name of the farm. The date of each plan is given.

The reverse side of this card may serve as a background for sections of tracing sheets.

(Envelope for this card opposite page 21, Introduction.)

p 21

obtained from scrutiny of the plan, but in libraries gazetteers were often consulted, and these might mention a number of farms with the same name. Landowners and factors could not always help in this matter, because frequently plans are held of farms in scattered estates, which have long since been sold. When the actual farm or estate has been located, it is then necessary to identify the boundary shown on the estate plan. Occasionally the modern boundary is identical with the eighteenth century one; usually some trace of the latter remains, but in some cases there is no apparent connection between the old boundaries and the present ones. One must then have some recourse to landmarks such as tributaries or hillocks, and draw boundaries proportionally. Proficiency comes with practice, and it becomes possible to enter details of a plan on the index card, and on the two and a half inch tracing sheet, as well as take any necessary notes, within an hour, when the mapping is a relatively straightforward process.

The symbols chosen to represent data may be seen on the loose key which may be used for each of the sheets. Although it must be noted that it is not always possible to differentiate between a farm settlement and for instance, a smiddy or a school, an attempt has been made to show every settlement or group of settlements. Where a cluster of farm buildings by its appearance and name is obviously a fermtoun it has been denoted with an F. If the fermtoun is very large, the F is

drawn larger than usual. If it is apparent that a fermtoun has been reorganised to become the residence of one tenant or one principal tenant, or if a new steading, usually in the form of a square has been constructed on the site of a fermtoun, it is shown thus ⊏⊐ . Where, as the result of enclosure a farmstead has been built on a new site it is shown thus □ . A single dwelling of sub-tenant or cottar is denoted by a triangle △ △ and two such dwellings close to each other are shown as two triangles △△ . This latter sign may denote a small cluster of cottages and unspecified buildings which may be barns or sheds, but where there is a considerable number of such dwellings, sufficient to justify the name of cot-town, the symbol is as follows △△△ . The sign V is used when the settlement is specifically called a village. It may be observed that underlining of symbols signifies continued existence of a settlement to the present day. Milltouns are shown thus ⊗F and Kirktouns thus +F .

Roads no longer in existence are indicated with a double dashed line ==== , and those which have deteriorated into tracks or paths with a single dashed line ---- . Sections of existing roadway are shown thus ::::: .

If croft or infield land is denoted and lies in a compact block, it is usually marked Cr, and where there is some significance in the distribution of rough pasture or meadowland, as regards distribution of settlements, or for purposes

of comparison with present conditions, such land has been shown - rough pasture .... , meadow or marsh ^ ^ ^ ^ .

The acreage of each farm represented on the two and a half inch scale is marked, unless there is no indication of it, and the date of the plan is added, thus - Drumglay (157) 1759.

It has been necessary sometimes to make tracings of plans which were too faded or torn to be photographed, and which yet were of unusual interest. Since it was usually necessary to differentiate possessions by colouring the tracing paper as the copy was being made, it is difficult to have such a tracing photographed satisfactorily. It is thought, having regard to difficulties of reproduction, cost of photographic processes, and the expense of ordnance survey maps included in the thesis, that, although the second copy will contain copies of most photostats, the first copy should be the only complete one, as regards illustrations and maps.

Acknowledgement must be made to the many people who have given advice and encouragement, or whose patience and forbearance made the collection of material and cataloguing of plans possible. Members of the University staff concerned with the supervision of work, have been ever ready to give of their time and experience, to make practical suggestions or offer constructive criticism. Mr. Mackay of the University

Photographic Department has given valuable and co-operative assistance. Landowners and factors have been informative and more than kind, in their efforts to give every possible assistance, and in their hospitality. Other than by giving a complete list of landowners, factors, lawyers and librarians, it is difficult to single out individuals for special mention. There are some, however, who were more than usually inconvenienced, and grateful recognition must be made of their unfailing cordiality, interest and helpfulness, in spite of demands made on their time. Especial mention must therefore be made of:

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Mr. W. Ross, Factor to Sir John Clerk, Bt.

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CHAPTER 2.

OLD METHODS AND NEW.

"We are already many ages behind the rest of mankind in our method of Husbandry[1]." "We are glad of all excuses for our sleeping on in poverty and our old jog trott.[2]" Such indictments of Scots farmers and their practices, made in the early eighteenth century by progressive Scottish landowners and theorists, were hardly less scathing than remarks passed by English visitors. Yet this was the eve of such an awakening that, consumed with a fever for improving, and imbued with initiative, enterprise and the spirit of unremitting effort, landlord was to vie with landlord, and farmer with farmer, elbowing out less zealous neighbours or unfortunate inferiors, and effecting within less than a century the transformation of Scotland into one of the most enlightened and progressive countries of Europe, as regards agricultural practice.

The aim of this chapter is not so much to outline the principal features of the runrig system as existing in the early eighteenth century, or to delineate the improvements to come, as to describe the backward condition of the pre-enclosure farmland, and to account as far as possible for

1. W. Mackintosh of Borlum - Essay (1729), p. 45. (See Bibliography for full particulars of works quoted).
2. Cockburn's Letters to his Gardener. (1727-44), p. 26.

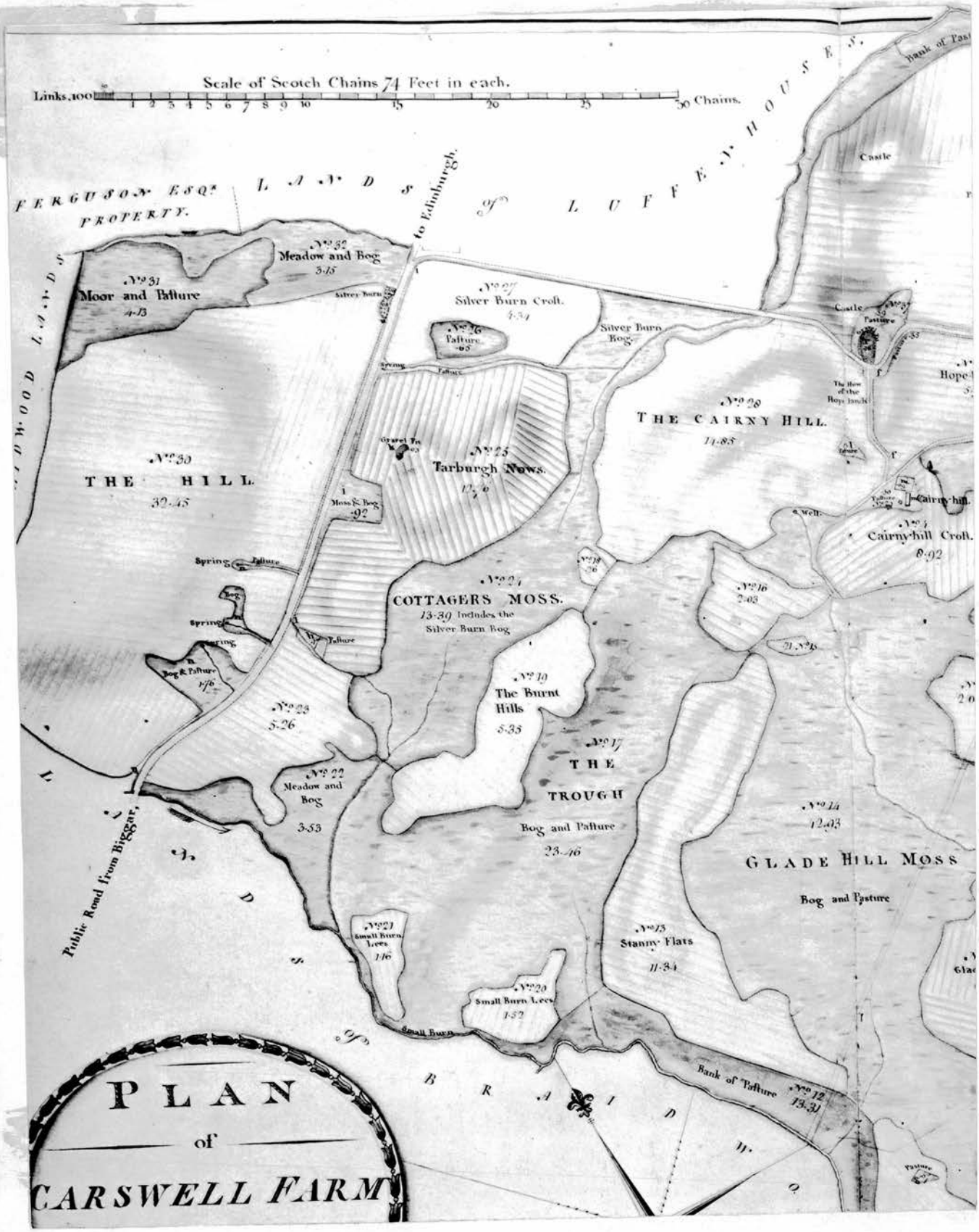

Fig. II.1. Carswell, Penicuik Estate. Note the arable land of the drumlins or 'knowes' alternating with the bog and pasture of the 'howes'. Hillocks are termed 'Castle'.

Scotland's "long night of sleepy indolence[1]". When the fetters which bound the country are known, then preliminary problems and duties confronting the improvers will be clear. If the policies pursued on the estates selected for special consideration, and indeed the whole tenor of the enclosure movement, are to be viewed with critical appreciation, it is essential that some enquiry be made into the motives and aims of the improvers, and the prevalent theories and doctrines of the times as set forth for guidance by the theorists. Although it was well said by Lord Kames that "In theory, the deepest penetration preserves not writers from wide differences, in practice, the ignorant only differ:" and the experimentalists of the times did propound most divergent theories, yet considerable attention was paid to their expositions[2]. Certainly, throughout a great part of Clydesdale, the principles of Lord Kames' "Gentleman Farmer" were applied religiously[3].

The Old Economy.

In the early eighteenth century, countryside and people alike were held paralysed, in the vicious circle of poverty and apathy. Farmers eking a precarious hand-to-mouth existence from unproductive land were too apprehensive or too ignorant to wish to change their ways, or to "ornament"

1. Wight. Volumes on Husbandry. Vol. 4, Survey 6, p. 470.
2. Lord Kames. The Gentleman Farmer, p. 325 and 326.
3. Numerous references made by Wight in his volume on Lanarkshire. Vol. 4, Survey 6, p. 518-566.

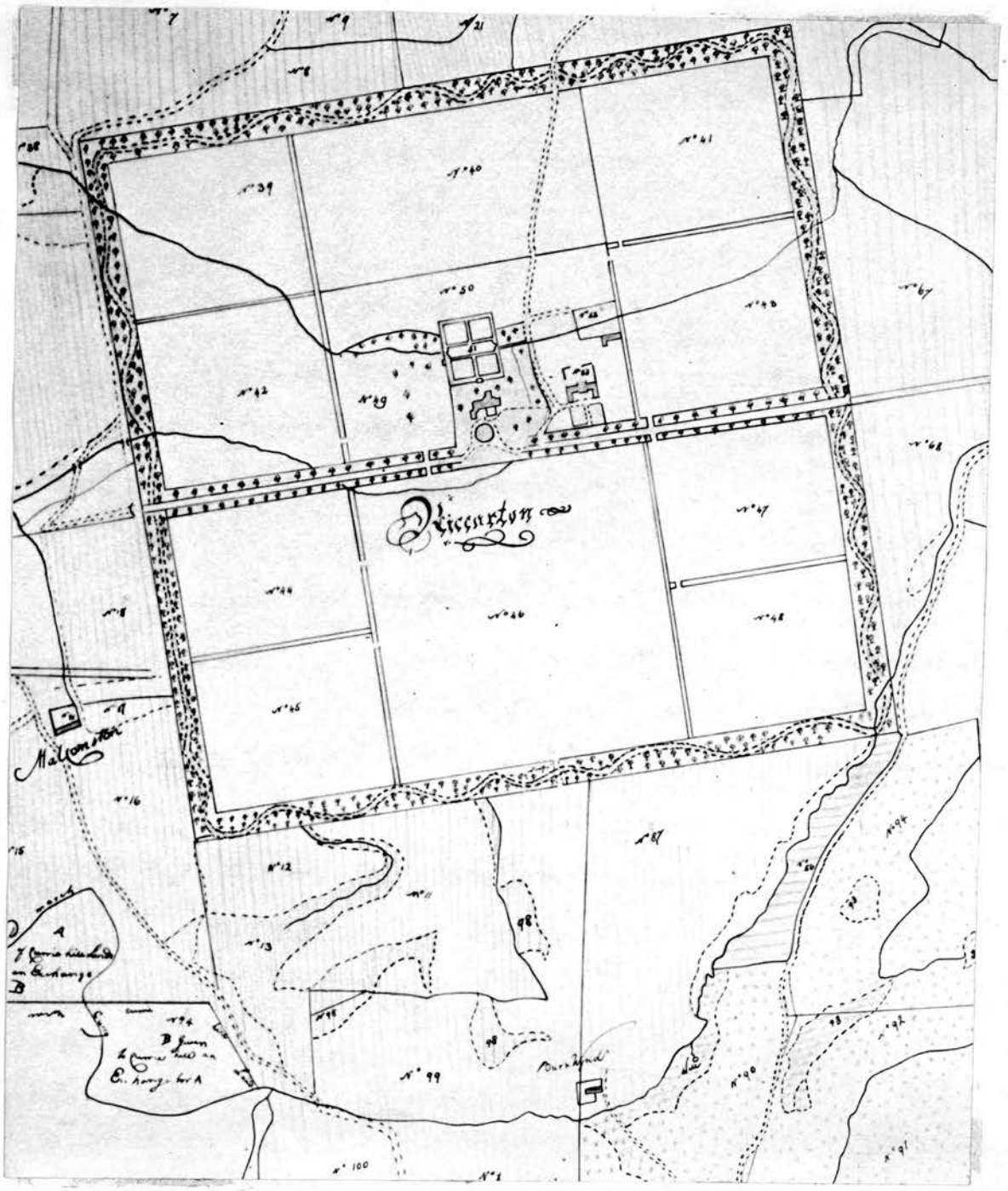

Fig. II.2. Riccarton Estate, Midlothian.

Untidy condition of the unenclosed section, contrasts with the regular enclosures.

(Photostat from a tracing)

their farms with trees and hedges, and Scotland did indeed lie only too open and exposed to censure and criticism. The critics, however, for one reason or another, were seldom dispassionate or unbiassed, and it may be well to draw on the impressions gained from the study of a large number of estate plans, in order to describe the appearance of farmland.

In contrast with the apparent regularity of modern field patterns, showing a landscape profoundly modified and subdued by man, topographic control was dominant in shaping the pre-enclosure landscape, so that the appearance of farmland varied considerably from region to region. Every irregularity in feature was reflected in irregularities of the arable land, and amorphous patches of other types of land. This was most conspicuous in glacial deposition regions, where every hillock or knowe had its patch of rigs, and stood like an island surrounded by the bogs of the hollows or howes (See Fig. II 1.) Although in more level and fertile lands this control was not so conspicuous, everywhere one might see constant intermixture of types of land, and patches of arable land interrupted by strips of pasture or bog. (See Fig. II 2). It is easy to understand why the runrig system, with its principles of fair and equal apportionment of land was evolved in such terrain. No generalisations can be made with respect to amounts of arable land or the proportion of infield to outfield, because these might vary considerably from farm to adjacent farm. In more favourable districts where there was a

Fig. II.3. Farms of Highlees, Dalserf Parish, Lanarkshire.

Note high percentage of arable land.

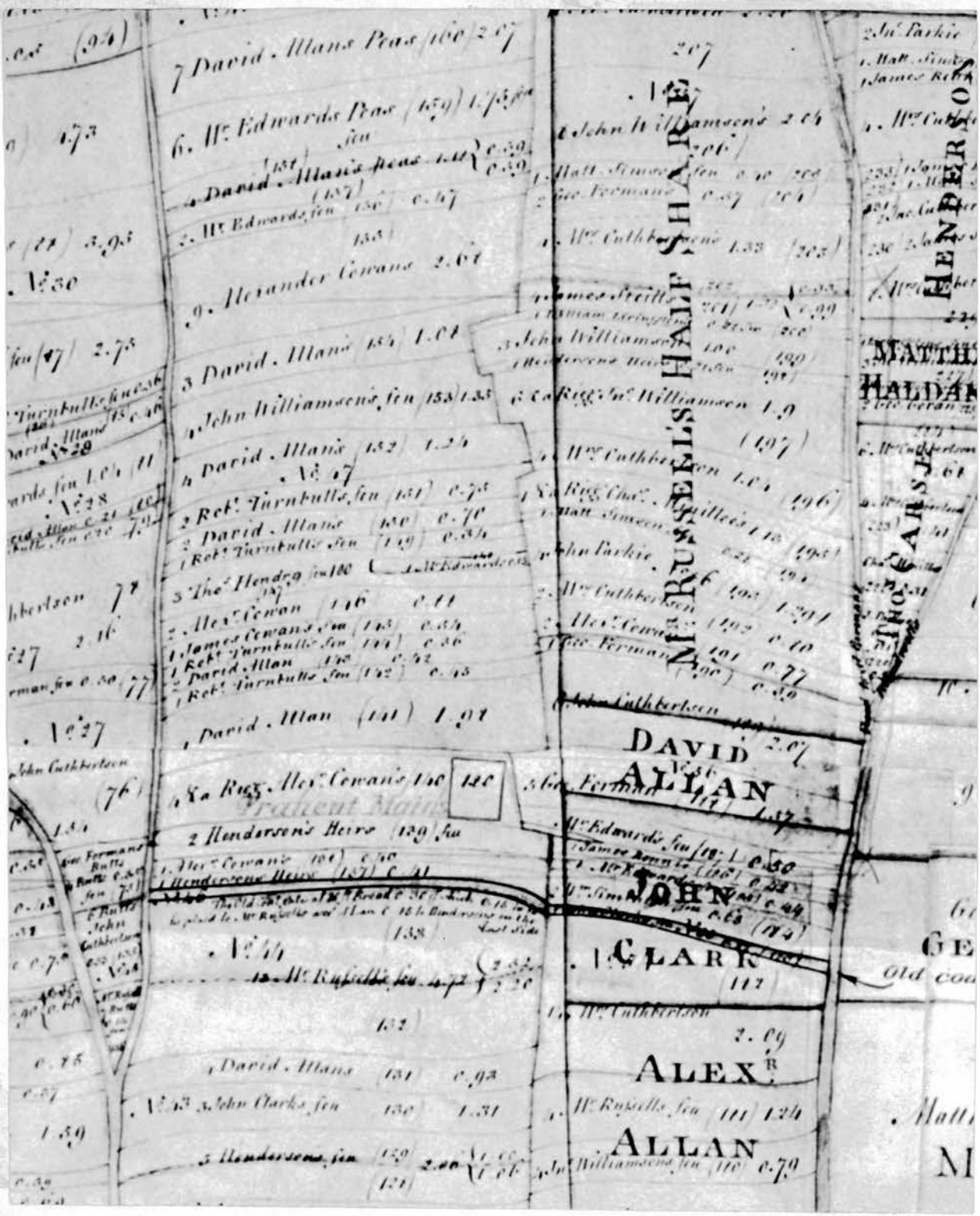

Fig. II.4. Section of the Runrig Lands of Tranent, East Lothian. (c. 1770)

considerable proportion of arable land, compactly laid together, rigs and fields were commonly more regularly disposed, rigs less crooked and baulky land less in evidence, than in districts where the arable land lay in scattered patches. (See Fig. II, 3).

The extraordinary intermixture of different types of land, which was to add to the problems of enclosure, was more than equalled by the excessive fragmentation and scattering of individual possessions. (See Fig. II, 4). Minute subdivision, even of individual rigs might be found in regions such as the Lothians, where the farmland otherwise presented a relatively organized appearance. Besides individual possessions lying runrig, farms and even estates might be found similarly lying rundale. Many farms were possessed in fixed runrig, the permanent shares being apportioned most unequally as regards quality and quantity, and it is obvious that almost universally the runrig system had broken down, and that its spirit was lost. (See Fig. II, 5). Sometimes the plans show a bewildering admixture of the possessions of tenants, crofters and cottars, but as commonly the fermtoun is a compact central settlement surrounded by consolidated blocks of possessions and with a few peripheral pendicles. The possession of a farm by one tenant, or by a principal tenant was by no means uncommon at the end of the seventeenth century, nor was the sense of fixed individual possession.

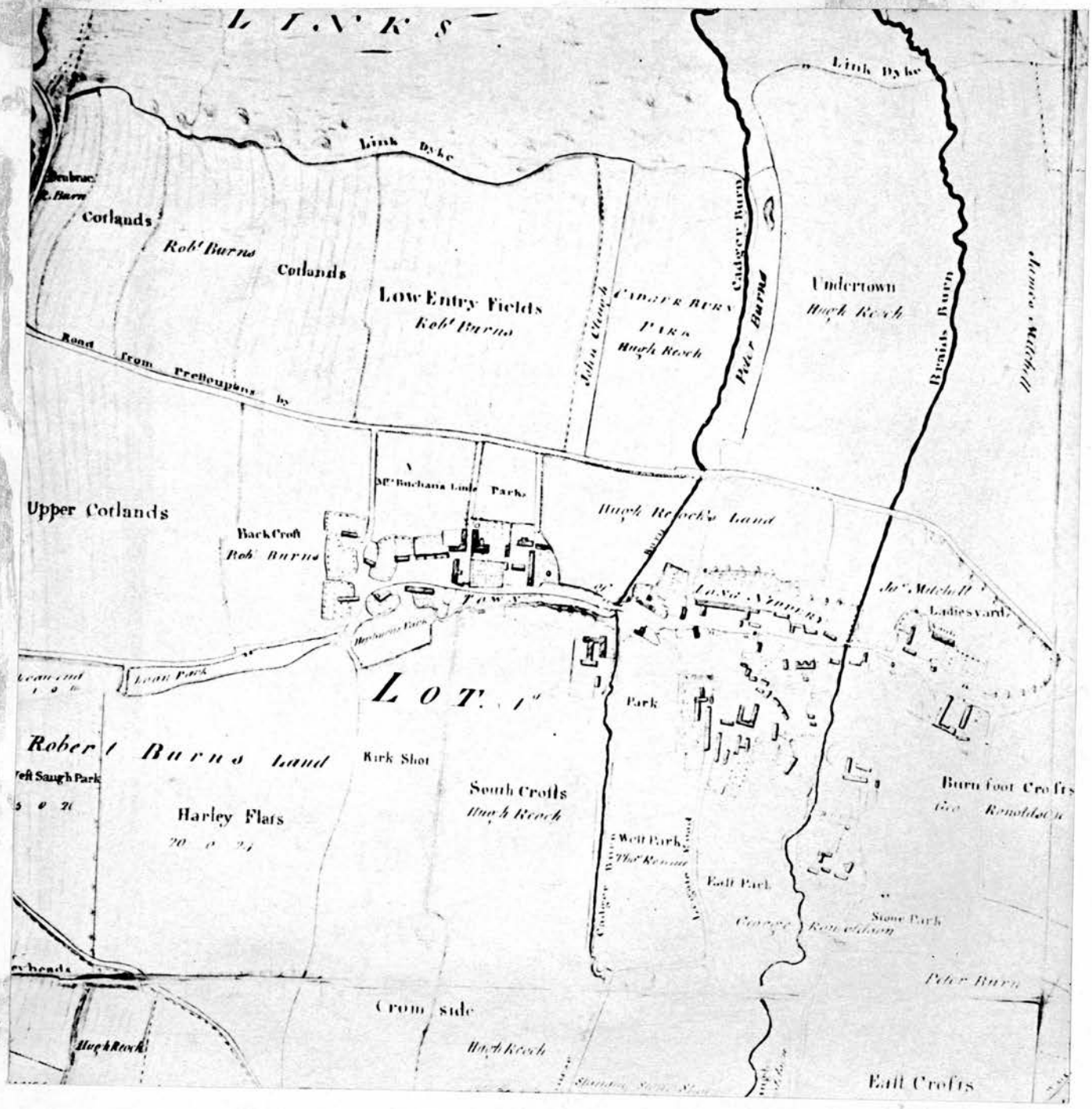

Fig. II.5. Section of the plan of the 'Barony of Long Niddery', East Lothian. 1778.

The plans show that in some regions tenants had achieved a considerable degree of independence from their neighbours at least with regard to the disposition of their possessions, and where the spirit of individualism was most marked, and a hierarchy of tenantry had developed, the ties of runrig would become irksome, and the idea of enclosure welcome - at least to the greater tenants. Although it may thus be seen that neither in the appearance of the pre-enclosure farmland, nor in the development of holdings, was there uniformity, there were however deficiencies which were commonly shared, and the system of agriculture practised was universally backward.

Although as early as 1457 an Act of Parliament was passed, in which the planting of woods and hedges was encouraged, and the erection of enclosure was advocated, both for woods and the better fencing of arable land, the estate plans of unimproved lands give little indication of woodland or of enclosures.[1] Throughout his journey from the Tweed to St. Andrews, in 1773, Johnson declared that he did not see a single tree which had not grown up far within the eighteenth century[2]. Symbolic drawings on estate plans confirm the scarcity though not the complete absence of mature trees, and this may be accounted for in part by the growing fuel problem. Besides the customary head dike at the upper limit of cultivation, and

1. Act Parl. (Jacob 11) 1457.
2. Johnson - Journey to the Western Isles of Scotland in 1773, pages 15 and 16.

a few stone dikes enclosing large areas - representative of seventeenth century enclosure efforts - the only prevalent dikes were those constructed of turf or 'feal' which separated arable land from pasture. Temporary enclosures called folds were used in the early eighteenth century, the idea of using these, according to Mackintosh of Borlum, having come from England[1]. Hamilton in his Introduction to Selections from the Monymusk Papers (1713-55), described these as sections of outfield, temporarily enclosed with hurdles, which were manured and ploughed for as many crops of oats or bear as the soil would take[2].

The condition of roads was notoriously bad until the last decades of the eighteenth century, and the superfluity of paths connecting fermtoun with fermtoun, kirk, mill and mansion, shown often on plans by spidery lines, denotes a system suited to man and horse, but not to the cart, which was almost non-existent at the commencement of the century. The farming community perforce lived in relative isolation, and had to be content with local supplies of dung or lime, until roads were improved.

As regards the system of husbandry practised in the early eighteenth century, it appears that the English certainly had justification in saying "That the Scots are at more

1. Maxwell - The Practical Husbandman, page 340. Reprint after revision by Maxwell of Mackintosh of Borlum's Essay (1732).
2. Hamilton - Selections from the Monymusk Papers, (1713-55), Introduction, p. 40.

Pains to be poor, than they take to be rich"[1]. It will be seen that this was partly due to bad relationships which had developed between tenant and laird and fellow-tenants, but it was also the result of the extremely low yield of the land which caused perpetual exploitation of it. No enlightened rotation was practised and the only rest which the soil knew was a return to its natural condition of weeds and coarse grass. Roger in his Survey of Forfarshire describes land in Glenisla being "indignant sent to rest with black oats," until it gathered a scurf and was "tortured anew" with alternate crops of oats and bear[2]. Where manure was used, cropping was more continuous than when neither dung nor lime was applied. Commonly on the infield or croft land, after a year's respite from cropping, dung was applied and bear sown as the first of three successive crops of bear and oats. Divisions of the outfield land - given different names regionally, such as falls, faughs, or brakes - usually gave three successive crops of oats and then lay in ley for three years. Complacency over this state of affairs was shown in current expressions such as this:

"If land is three years out and three years in,
'Twill keep in good heart till the deil grows blin'[3]"

1. Mackintosh of Borlum. An Essay on the Husbandry of Scotland (1732) - Reprint after revision by Maxwell - The Practical Husbandmen, p. 346.
2. Roger - Survey of Forfar, 1794, p. 10.
3. Current in Dumbartonshire. A. Ramsay. History of the Highland and Agricultural Society of Scotland, 1879, p. 78.

Pease had an accepted place in most rotations by the early eighteenth century, and wheat had been grown for long in exceptionally favoured districts.

The habit of ploughing from the outer edge towards the centre of each ridge or rig - which might be from twenty to thirty feet broad - had the effect of heaping earth towards the crown, so that rigs might be three feet or more higher in the centre than in the furrows. Ridges thus became high and broad with an increasing tendency to be ill-drained, and were separated by baulks which were waste strips of weeds, coarse grass and stones. After the heavy wooden plough had churned up the clogged earth, the sown seeds had to struggle with the weeds which grew unheeded. It is not surprising that a three-fold yield was common, wherewith there was "ane to saw, ane to gnaw, and ane to pay the laird witha'," and the fourth seed was considered good. Wight quoted a farmer of lower Clydesdale as saying, doubtless with some exaggeration, that before he improved his land with lime, dung, and fallow, a mouse sitting on its hind legs might have reached the grain from the standing corn.[1]

Before the introduction of clover and sown grasses, horses and cattle were much weaker creatures than those of to-day. They roamed over unimproved "pasture" and "meadow" which we should frequently have considered merely moorland or marsh, and after harvest they fed on the stubble, and grass

1. Wight - Volumes on Husbandry, Vol. 4, Survey 6, p. 548.

Fig. II.6. The settlements of Mountlothian Farm, Penicuik Estate. 1796.

The present steading is on the site of the Upper Town, the other site being unused marsh.

and thistles of the baulks. Frequently fermtouns were placed in marshy land, with more regard for beasts' grazing than for man's health. (See Fig. II, 6). When the introduction of clover and sown grasses was advocated, many farmers were at first most averse to growing beasts' meat at the expense of man's meat[1]. In spring the cattle which had survived the winter, commonly had to be lifted out to the fields, and it was essential to employ at least four horses or six oxen to pull the heavy plough. Lord Kames stated that in the early eighteenth century, six oxen and two horses were universally employed in the south of Scotland, and ten to twelve oxen in the north, to pull the plough[2]. According to H. Grey Graham, four men completed the plough team, each man with a different function to perform, and "With all this huge cortege, a plough scratched half an acre a day, and scratched it very poorly[3]. To protect the arable lands from depredation of the animals large numbers of herds had to be employed, and even cottars employed their sons as herds. Useless old cattle were fattened for eight or ten weeks to provide such tough meat for the towns that some of the people of Edinburgh sent to Berwick for beef and veal. These old beasts, according to Mackintosh of Borlum, were blown up with scalded barley,

1. Prof. J.A. Scott Watson. The Agricultural Revolution in Scotland, 1750-1810, p. 8.
2. Lord Kames. The Gentleman Farmer, p. 39.
3. H. Grey Graham. Social Life in the Eighteenth Century, p. 156.

chaff and malt-grains, so that "lean Rickle of Bones" was all that the butcher could procure in Fife and Lothian, from Candlemas to June[1].

Tenants usually had rights of foggage and loggage, which included the right to cut turf from a common moor or a specified section of farmland for use in the construction of cottages, for thatching or for fuel. Some did not scruple to denude even their best meadowland, and on one occasion, Mackintosh of Borlum discovered a man in the process of doing so. The explanation given by the man was that the land was near at hand, and why should he spare it when another might be in his place the next year? "His more barbarous master" who was present at the time, just laughed[2].

Farmers were hidebound by superstition and habit, and by the conviction, prompted by an austere religion, that trials which beset them were divinely ordained and must be passively endured. Maxwell stated that although the weather was good, tenants would not plough till Candlemas, when they would insist on ploughing no matter the weather. All railed at any light-headed innovator and "foolish Pretender to more Knowledge than his Forefathers had[3]". Some considered weeds to be a necessary evil and therefore not to be eradicated. Maxwell described tenantry generally as a set of ignorant, obstinate and lazy

1. Mackintosh of Borlum. Essay, 1729. p. 131 and 132.
2. Mackintosh of Borlum. Ibid., p. 57 and 58.
3. Maxwell of Arkland. The Practical Husbandman, p. 370.

people, who except at ploughing, sowing and harvest, did little or nothing on their farms, besides casting, winning and leading some peats, pulling some thistles, making some hay and threshing fodder for their beasts[1]. He was too prejudiced to consider the amount of time spent by tenants in the performance of services for their masters, and moreover the astonishing progress made by tenant farmers in the latter half of the eighteenth century disproves his conviction that they were innately indolent. Ignorance and a well-justified fear of famine, or of being deprived of land due to enclosure, or forced to pay a higher rent, did make many unwilling to change their ways, but the fundamental cause of the prevalent apathy and backwardness lay in the landholding system, and a grave deterioration in human relationships since the time of truly co-operative runrig.

"Vigour nerves the arm of a man, who looks round on the spot of which he and his posterity are likely to be lords" said Roger, when discussing the incentive given by perpetual feus[2]. At the commencement of the eighteenth century, a few fortunate farmers were in possession of leases of nineteen years or more, many held short leases of from five to ten years, but the majority had no further security than a written or verbal tack for a year. Of the latter class, the proportion evicted at the end of a year was possibly small, but none could

1. Maxwell - 1757., p. 372.
2. Roger - Survey of Forfar, 1794. p. 8.

be assured of indefinite possession. Such a tenant could not but take a short term view of his tenure. Moreover when account is taken of the onerous services and carriages which he doubtless had to perform for his laird, of the scattered disposition of his rigs, and of the nature of the runrig system which in its best form encouraged constructive co-operation but was not conducive to individual enterprise, it is not surprising that he neither enclosed nor improved. Indeed, when a tenant was haunted by constant fear of eviction, he bore no love for the man who should take his place, and he tended to adopt a policy of robber economy. Mackintosh of Borlum likened the farming system to men pulling on a rope against each other. A distrusting landlord gave a lease for a year, demanded as high a rent as possible and extorted all the service that he could. The farmer to prevent others coveting him or overbidding "cuts the best Ground about his Farm, very often of the Corn Fields themselves, for his Dunghill, destroys Woods or Planting on his Farm for his Houses- but still keeps these as low in Repair as possibly he can, and indeed does not care how ill he uses every Part of his Farm, that it may look as despicable as possible. .... What must a Country come to, that annually sinks in Value!"[1]

It is quite evident from examination of a number of estate plans that few shared farms of the eighteenth century were shared in anything like equal portions. Surely it must

1. Mackintosh of Borlum Essay 1729. Dedication, pages XXIV and XXV.

have been difficult for those with possessions greatly varying in size, to work in close association and co-operate amicably, without the development of class or property consciousness, or domination of the lesser tenants by those who were more substantial. It is certain that with fixation of runrig a jealous sense of possession and personal rights frequently ensued, and that runrig proximity engendered not the spirit of good neighbourhood but rather constant petty friction. Nowhere is this better seen than in legal processes of the times, and one may be quoted to provide an example. The case of John Inglis, Merchant in Douglas (Lanarkshire) against James Symington and Mary Cleland (1783)[1], refers to alleged misuse of a runrig road which skirted a parcel of land belonging to the pursuer and gave access from the main road to the possessions of the defenders. The pursuer alleged that the road was seven and a half feet broad, that it was not possessed by the defenders and yet that they pared it, dug it and planted potatoes on it, making another road for themselves across his ground. He claimed £5 sterling for damages, and also the potatoes. The defenders averred that they possessed the runrig path, that it was nine feet broad - seven and a half feet not being broad enough for their carts - and that the pursuer's cattle damaged their crop. A compromise was effected and the strip became a road again. Decreets dealing with the division of runrig lands

1. H.M. Register House.

give ample evidence of the same unco-operative spirit - of an overbearing attitude on the part of the laird or a substantial tenant, of obstinacy for no good reason on the part of the lesser tenants, and of loudly voiced complaints, and what appear sometimes to be excessive demands, made by the possessors of one or two acres of land.

Lord Kames referred to the ambition that drove many to overstrain themselves.[1] "Men are ambitious of power, the lower classes not excepted. Every day-labourer who has saved a little money by penury, immediately commences farmer. He purchases his labouring cattle upon credit, and depends on his little stock for what else he wants. What tickles him is not independence only, but to have the command of servants and horses. Many a poor man is involved thus in difficulties..." Maxwell of Arkland is more scathing about this. According to him, when a ploughman collected a hundred merks, he went to fairs and markets, exchanged a horse, bought and sold a cow, and married a wife. If her father had land, though ever so little, she would probably have nothing but the "Cloaths on her back" because a man in his position did not let his children go to service. At any event "a Mailing they must have, a Horsegang or two of Land, or, as some of them express it, a leg or two of a Plow", for as Service was a Scandal before marriage, much more is it reputed to be so in that honourable state, to people having a Stock"[2].

1. Lord Kames. The Gentleman Farmer, p. 317.
2. Maxwell of Arkland, 1757. Op. cit., p. 368.

Although small tenants might be ambitious, apparently they did not welcome any progressively-minded incomer, especially if he were a stranger to their barony. They might brand him "Land-louper" or worse, and burn his stacks of clover and rye-grass hay[1]. Apparently they were afraid that their lands might be shown to be improvable, and that their rents would consequently be raised.

Lord Kames wrote fairly and dispassionately, but it must be remembered that the other theorists quoted, either from prejudice or for emphasis, deliberately represented tenant farmers in the most unfavourable light. It is certain however that ignorance and prejudice walked the land, that husbandry was conducted on most wasteful and soil-exhausting lines, that the runrig system had outlived its useful function, and had become cumbersome and a source of friction, that co-operative effort was giving way to personal ambition, and that the sense of insecurity of tenure and the burdensomeness of obligation owed to the laird, hindered improvements. The productivity of the land was low, and as long as landowners received the greater proportion of their rents in kind, or in services, few of them had the ready money to effect improvements.

The New Economy

Some Scottish Landowners of the late seventeenth century had been wise enough to establish good relations with their

1. Maxwell - 1757, p. 371.

tenants, to give them long leases and encouragement to lime their land and enclose it, but the original impetus towards a more enlightened scheme of things, was given by intercourse with England, which became common shortly after the Union of the Parliaments in 1707. Scottish aristocrats and officials began to travel regularly to London, and could not but observe the incomparably better condition of the countryside, while the cattle trade with England which was fostered in the early eighteenth century, brought many Scottish drovers also into contact with Englishmen and their ways. The Duke of Argyll declared that the Enclosure Movement began because of the desire to obtain more money for black cattle.[1] The Scots thought that they would fatten the cattle before selling them, and to that end enclosed their lands and improved their pastures. Some of the Scots who had been Jacobites, lived for some time on the Continent, and came home with ideas about improving their lands culled from France or the Low Countries. The Society of Improvers which was instituted in Edinburgh in 1723, made farming the fashion for gentleman farmers, and soon many lairds forsook their travels and stayed at home "cultivating their fields and could talk of nothing but dung or bullocks.[2]

There were some, such as Mackintosh of Borlum, who wrote while he was a prisoner in Edinburgh Castle, who were indeed

1. Duke of Argyll. Scotland As it Was and As it is, p. 388.
2. Autobiography of the Rev. Alexander Carlyle. (Ed. Burton, 1860), p. 459.

lovers of their country and disinterested enthusiasts in the cause of improvements, some had the interests of their tenants as much at heart as their own, but practically all improvers whether landowners or farmers were stimulated to action by the thought of financial gain. According to Professor Scott Watson the old farmer wanted a full meal kist (or chest), while the new man wanted 10% profit[1]. As early as the seventeen-seventies farmers had a reputation for loving money[2], and an implied rebuke is contained in the poet Fergusson's lines about honest cottar folk, "who never fash to lade their Kist wi' useless Cash"[3].

In some respects the actual process of enclosure and improvement was easier and more straightforward in Scotland than in England. The old landscape with its dearth of trees, dykes, well-constructed roads, and substantially constructed cottages, could be easily obliterated, the most expensive alteration confronting the improvers being the straightening and lowering of the old ridges. Since tacks commonly were held merely from year to year, it was easy to eject tenants, and many of these were accustomed to moving about from place to place. It was not essential for a landowner to obtain a private Act of Parliament prior to enclosure, and even the division of commons was commonly effected by private arrangement,

1. Professor J.A. Scott Watson, 1929, Op. Cit., p. 11.
2. Wight, 1778-84. Op. Cit., Vol. 4, Survey 6, p. 463.
3. Fergusson. Hame Content: A Satire.

arbitration or a simple process at law.

In 1695 the Scots Parliament passed an "Act anent Lands lying Runrig" which decreed that whenever lands of different heritors lay runrig, it should be lawful for either party to apply to the Sheriffs, Stewards, and Lords of Regality or Justices of the Peace of the several shires where the lands lay, to the effect that these lands might be divided according to their respective interests.[1] An exception was made of the Burgh and Incorporate Acres. This act gave great incentive to improvers to consolidate their lands, although its interpretation also became the object of endless disputes. In 1770 an Act of Parliament was passed which greatly facilitated the improvement and enclosure of entailed estates. This was entitled an "Act to encourage the Improvement of Lands, Tenements and Hereditaments, in that part of Great Britain called Scotland, held under Settlements of Strict Entail"[2]. Restrictive clauses included in many deeds of entail, which had obstructed improvements, were abolished. It became possible for every proprietor of an entailed estate to grant long leases up to thirty-one years, to lay out money on improvements and be creditor to the succeeding heir of entail for three quarters of the money laid out in making these improvements (within limits), and to consolidate his lands by a process of

1. Acts of Parliament of Scotland, IX, 421.
2. 10. Geo. III, c.51.

exchange or "excambion". Provision was made in the leases for agricultural improvements. Leases granted for thirty-one years obliged the tenant to enclose all his lands within thirty years, one-third to be enclosed within the first ten years and two-thirds within twenty years. A similar ruling governed the possessors of leases for any term of years exceeding nineteen. Tenants were to keep fences in repair and leave them so at expiration, while not more than forty acres were to be comprehended in one field where land was arable. There were also conditions regarding building leases, and stipulations about rent.

Although efficient road construction began in the Highlands after the 'Forty-five', the Turnpike Act of 1751 prompted the construction of greatly improved roads throughout Scotland.

Theorists and Pioneers.

The first didactic treatise on agriculture in Scotland was written by James Donaldson of Edinburgh, and published in 1697. This was followed two years later by an anonymous pamphlet, which has been attributed to John, Lord Belhaven.[1] Donaldson was a business man who took an intelligent interest in farming, and Lord Belhaven was a landowner who had lived in England. Both writers advocated enclosure, fallowing,

1. James E. Handley. Scottish Farming in the Eighteenth Century (1953), pages 117-121.

planting of vegetables, and numerous other improvements, and although their works were presented in rather unsystematic fashion, and in the case of Donaldson at least, were not derived from first-hand practical experience, they presented enlightened and sound views, which Scots farmers might have done well to put into practice. Doubtless these dissertations would arouse general interest, but the first indication of a growing desire to put new ideas into practice, was given by the establishment in Edinburgh in 1723, of the "Society for Improving in the Knowledge of Agriculture." Eminent titled landowners promoted this society, with the aim of disseminating knowledge of new methods and giving guidance in the practice of them. Members designated themselves 'Improvers', and from the first showed considerable enterprise and activity, Robert Maxwell of Arkland being their most energetic Secretary. The first publication of this society appeared in 1724, and from then until the seventeen-sixties a number of exhortative treatises or critical articles appeared. 'The Edinburgh Society for Encouraging Arts, Sciences, Manufactures and Agriculture' which was instituted in 1755, encouraged progress by offering prizes for the best achievements in various types of agricultural improvement, and by inviting original essays on subjects connected with farming or farm-tenure. By the sixties and seventies the enclosure movement was becoming widespread, and books produced at that time were rather mature

and objective works for reference or guidance, than pioneer efforts.

Since the main object in treating of this subject is to present doctrines expounded by theorists and principles laid down with regard to improvement and enclosure, to avoid confusion it has been decided to concentrate mainly on the precepts of three, to whose advice considerable attention was paid. These are Robert Maxwell of Arkland, William Mackintosh of Borlum, and Henry Home, Lord Kames. Maxwell was a practical farmer, who latterly, having suffered failure due to his enthusiastic experimentation, became a land valuator and supervisor of improvements. As spokesman of the Society of Improvers, he was responsible for answering the queries addressed to the Society, and this he did in great detail, for Scotsmen and Englishmen also, writing with authority and with the conception of agriculture as a science. Besides publishing in 1743 "Select Transactions of the Honourable the Society of Improvers in the Knowledge of Agriculture in Scotland", he published a later collection of papers on husbandry, under the title of "The Practical Husbandman" (1757). Mackintosh of Borlum was an enthusiastic idealist, who wrote candidly, impartially, and, although serving a life sentence in Edinburgh Castle for his part in the 'Fifteen', exuberantly. Born in 1662, he had travelled in his youth in England and France, and on his return to Scotland, had improved and planted his own

estate in Inverness-shire. His first book, of some three hundred pages, had an ambitious aim. Printed in 1729, it was entitled "An Essay on Ways and Means for Inclosing, Fallowing, Planting etc. Scotland, and that in sixteen years at farthest, By a lover of his country." In 1732, appeared "An Essay on the Husbandry of Scotland with a Proposal for the further improvement thereof." His works are of value for their logical approach and outspoken criticism. Lord Kames (1692-1782) was a Berwickshire pioneer, and the possessor after 1766 of an estate in Southern Perthshire. He was a public-spirited man, with a fervent desire to be useful to his country. He was an active member of the Board of Commissioners for the Annexed Estates, was responsible for suggesting a board of agriculture with "living instructors who convey knowledge by practice as well as precept"[1], and to his initiative was due the first agricultural survey of Scotland, undertaken by Andrew Wight. "The Gentleman Farmer, being an attempt to improve agriculture by subjecting it to the test of rational principles," appeared in 1776, and was accepted at once as a standard work by many landowners, for whom the book was chiefly written. The first section of the book deals with the practice and the second with the theory of agriculture, and according to the author, every article mentioned had stood the test of many years of repeated experiment and diligent observation[2]. Lord Kames had

1. Lord Kames. The Gentleman Farmer, p. 400.
2. Lord Kames. 1776. Op. Cit., Preface, p. ll.

considerable experience of farming methods in Scotland and other countries, and was familiar with the most advanced views of his time. He asks the question of landholders "Can a landholder be employed more profitably for his country or more honourably as well as profitably for himself, than to rouse emulation among his tenants, by kind treatment, by instruction, by example, and by premiums?[1]"

Reference has been made to indictments of the Scottish tenantry of the early eighteenth century, and their practices, but Mackintosh of Borlum especially, also sought redress for wrongs which were attributed to the landowners. Maxwell was more concerned with giving practical advice, than with denouncing misdeeds of his clients, and Lord Kames wrote at a later period, and was not so concerned with exposing evils. Addressing himself to the Lords and Gentlemen of the Scots Nation in the British Parliament, Mackintosh of Borlum besought their Lordships to sell Superiorities so that they might better improve their remaining estates, to lessen the loads which their immediate vassals had to bear, and to take off the grievous, and too long continued Services our Commons grone under[2]" He declared that English farmers now freed from obligatory services would willingly help the gentry when their work was behind, whereas in Scotland "we had better

1. Lord Kames. Ibid., Preface, page 13.
2. Mackintosh of Borlum. 1729. Dedication, pages XV and XVI.

hire Plowers and Reapers, than have our Bonnage, as we call it, Services do it."[1] He complained that the commons had been hardly used, being kept poor and not given leases.[2]

Absentee landlords were upbraided by Maxwell[3], and Mackintosh of Borlum considered that the gentry might spend less time and money in London and abroad[4]. This was an evil much deplored, partly because of the autocratic control that the absence of the laird might give to chamberlain or grieve. Mackintosh of Borlum mentioned the tyranny of chamberlains on large estates, and spoke of task-master grieves on the farms of indolent gentlemen[5]. The possessors of scattered estates relied perforce on factors, but especially in the latter half of the century, newly-found wealth and the attraction of residence in England or overseas made many landlords almost complete strangers to their estates, at a most critical time of their development. Well might Fergusson say "They'll tell whare Tibur's waters rise,
What sea receives the drumly prize,
That never wi' their feet hae mett
The Marches o' their ain estate."[6]

Already, by 1729, the upper classes were becoming too extravagant to be able to live within their incomes. Scotland was playing at being big since the Union, said Mackintosh of

1. Mackintosh of Borlum. 1729 , Dedication pages XXVII and XXVIII.
2. Mackintosh of Borlum. Ibid., Dedication, page XXIII.
3. Maxwell. The Practical Husbandman, p. 391.
4. Mackintosh of Borlum. 1729, p. 14.
5. Mackintosh of Borlum. 1729. Dedication p. VI and p. 60.
6. Fergusson. Hame Content: A Satire.

Borlum[1]. In place of home-spuns he saw ladies in French or Italian silks and brocades, and lairds and their sons in English broadcloth: in place of Scots table linen were Flemish and Dutch diaper and damask; with two or three substantial dishes of beef, mutton and foul, he saw served up "several Services of little expensive Ashets, with English Pickles, yea Indian Mangoes, and Catch-up or Anchovy Sawces[2]". Thus enclosure and improvement became imperative.

Before improvement commenced, Maxwell advocated the employment of a surveyor who should measure, present a plan and give a memorial concerning cultivation of the several fields[3]. He advised young heirs not to try any grandiose experiments in ploughing husbandry, but rather to appoint an adviser to go over the estate farms twice in each year, once immediately after harvest, to direct affairs and the other time in spring when they were to observe operations[4]. With regard to the execution of improvements, Mackintosh of Borlum suggested that English day-labourers should be employed from the counties excelling in good hedges and fine ploughing, preferably from Southern England. These should come for a year to give instruction in proper methods of enclosing and improving[5].

1. Mackintosh of Borlum. 1729. Pages 228 and 232.
2. Mackintosh of Borlum. 1729. Page 229.
3. Maxwell. The Practical Husbandman, page 423.
4. Maxwell. Ibid., page 379.
5. Mackintosh of Borlum. 1729. Pages 150 to 153.

In Scotland, the term 'enclosure' signified merely the actual process of enclosing land by dike or hedge, and commonly enclosure either preceded or came after improvement of land. Thus although the size and type of enclosure selected, depended to some extent on farm acreage, type of husbandry, exposure and soil type, consideration was also taken of relative costs, of problems of land allocation, and of widely-circulated theories. It may be well to discuss theories about enclosure, before proceeding to other matters.

Maxwell's principal aim in his attitude towards enclosure was the achievement of efficiency. He proceeded on the assumption that a farm should be of a size suited to the accommodation of one tenant, who should have sufficient arable land for a plough, and deemed it better for smaller tenants to serve another farmer or a manufacturer[1]. In answer to queries he frequently advocated division of the arable section of a particular farm into four or five divisions. Thus, for example, he suggested that on the estate of Sir Alexander Dick of Prestonfield, seventy-five acres of arable land should be divided into five, fifteen acres always lying in summer fallow[2]. An alternative division into four parts was also given. Thus account was taken of rotations practised.

Mackintosh of Borlum was concerned for the wellbeing of the tenant who might fear that his lord would use improved

1. Maxwell. The Practical Husbandman, p. 373.
2. Maxwell. Ibid., p. 158.

land for breeding and wintering cattle, and turn him out. He insisted that "The Commons of Scotland have as much Right to live in Scotland and pay Rent, as any Landlord has to live there and receive it." - that in fact the tenants were as heritable as the landlords[1]. He mentioned the effect which the enclosure movement in Galloway had had, of turning over to cattle, land which had previously held men, and advised that the landlord should be restricted to enclosing merely his mains farm, or a fourth or fifth part of a medium-sized estate[2]. Since he desired the tenant to enclose a sixteenth part of his holding every year, enclosures made in such a fashion would vary in size, but within limits stipulated by him of two and a half acres and twenty acres.[3]

Lord Kames also had consideration for the small tenant, but considered enclosures merely from a functional point of view. He considered that sheep should not be restrained within small enclosures, and that they should be accommodated in fields of thirty to forty acres, whereas enclosures of twenty to twenty-five acres were sufficient for horses or horned cattle[4]. He maintained that large enclosures had the advantage of free ventilation, which was essential while they were in corn, and deprecated the small enclosures commonly found in England where "heat and shelter only seem to have been formerly

1. Mackintosh of Borlum. 1729. pages 159 to 161.
2. Mackintosh of Borlum. 1729, pages 160, 163 and 166.
3. Mackintosh of Borlum. 1729, pages 98, 7 and 37.
4. Lord Kames. The Gentleman Farmer, pages 303 and 304.

thought of[1]". He declared that thus England "has suffered greatly, labour lost, land lost, corn and grass lost within ten yards of the fence, and in a ticklish season, perhaps the whole lost for want of ventilation[2]". Wight in his volume on Lanarkshire referred to small tree-fringed enclosures, which had been made small for shelter after the fashion of enclosures observed in England, and quoted the size of the enclosures on one farm as being from six to twelve acres[3]. Two other considerations which, according to Lord Kames, should be kept in view, when the size of an enclosure was determined, were that ditches ought to be so directed as to carry off superfluous moisture, and that different soils in the same enclosure ought to be avoided[4].

In his pamphlet of 1699, Lord Belhaven suggested to East Lothian farmers that it would be worth their while to "rickle up a dry stone dyke" for pasture[5]. It seems that many of the early improvers in the Lothians enclosed their entire farms not merely with dry stone dykes but with substantial walls of stone and lime. Topham in his Letters from Edinburgh, (1774-1775) expressed the wish that the enclosures near Edinburgh were more moderate-sized, with hedges and trees, instead of walls of stone[6]. Mackintosh of Borlum

1. & 2. Lord Kames, 1776, page 304.
3. Wight. 1778-84. Op. Cit., Vol. 4, Survey 6, pages 519 and 536.
4. Lord Kames. The Gentleman Farmer, page 303.
5. Lord Belhaven. Essay 1699 - Reference Prof. J.A. Scott Watson. Transactions of the Highland and Agricultural Society of Scotland. 1929, page 7.
6. Topham. Letters from Edinburgh, 1774-75, page 231.

declared his preference for a quickset hedge and ditch, which improved with age, looked less bleak than a wall, and might afford nourishment for cattle[1]. Moreover, he maintained with reference to walls of stone and lime - "Inclosing is too chargeable.... And I have known, above one Example, that Gentlemen have, with Mason Work, inclosed themselves out of their Land[2]". Maxwell however commended walls of stone and lime, although not necessarily recommending their construction. Lord Kames thought that to build with lime was on the whole, a saving, where lime was at hand[3]. According to him, a dry-stone wall, if intended for sheep ought to be six feet high, and if intended for horses or horned cattle, five feet high. A square field of ten acres enclosed with a wall six feet high would cost £50. 15. - at the rate of twenty shillings average cost per rood of thirty-six square ells. To reduce the expense of building dry-stone walls, he recommended the construction of a low wall of two and a half feet, coped with sod, and protected by a ditch on either side[4]. A rood of such a fence might be made for about three shillings, so that the construction of a ten-acre enclosure would cost about £30. Since prices rose steadily after the first decades of the eighteenth century and with increasing rapidity in the latter half, it must be noted that Mackintosh of Borlum wrote in 1729, Maxwell in 1757, and Lord Kames in 1776.

1. Mackintosh of Borlum, 1729. Postscript, page 51.
2. Mackintosh of Borlum, 1729. Postscript, pages 49 and 50.
3. Lord Kames. The Gentleman Farmer, page 285.
4. Ibid., Lord Kames. p. 285-287.

Maxwell recommended the planting of trees along hedge-rows and at angles at the corners of enclosures[1], and Mackintosh of Borlum advised the planting of trees, and especially fruit trees at a distance of two or three feet from a hedge[2]. Lord Kames, who gave much detailed advice about the construction of ditch and hedge enclosures, and the rearing of hedges, declared that "To plant trees in the line of the hedge, or within a few feet of it, ought to be absolutely prohibited, as a pernicious practice." People ought to know that "there never was a good thorn-hedge with trees in it[3]". Another practice which he deplored was the planting of a hedge on the top of the earth thrown up from the ditch[4]. Mackintosh of Borlum advocated the importing of quickset hedge plants from England or Holland, because of the extortionate prices charged by the few nurserymen that there were in Scotland in his time[5]. He suggested that gentlemen should raise these in their gardens, and Lord Kames maintained that the only way that a gentleman farmer could be sure of having wholesome and well-nursed plants, was by raising them himself[6].

For temporary expedients Mackintosh of Borlum suggested using French or Devon whin-seeds[7].

1. Maxwell. The Practical Husbandman, p. 424.
2. Mackintosh of Borlum, Essay 1729, p. 105.
3. Lord Kames, The Gentleman Farmer, p. 298.
4. Lord Kames, Ibid., p. 298.
5. Mackintosh of Borlum, Essay 1729, p. 99.
6. Lord Kames, Ibid., p. 289.
7. Mackintosh of Borlum, Essay 1729, p. 289 and 290.

Maxwell quoted the specimen cost of enclosing thirty-five thousand acres in seven years[1]. On the assumption that enclosures were to be from ten to twelve acres, he reckoned that seven pounds would enclose a ten acre field, and pointed out that when one enclosure had been made, adjacent ones would be less expensive. The total cost of the enclosing was estimated at twenty-one thousand pounds. Another expedient which Maxwell suggested for lowering expenses, was to enclose first the boundary lands of the estate, so that expense might be shared with contiguous heritors. Mackintosh of Borlum demonstrated that, generally speaking, it was cheaper to make large enclosures than small ones. Thus if a hundred and sixty acres were to be enclosed in ten-acre divisions, the enclosure would take sixteen years and cost ninety-six pounds, whereas if twenty-acre fields were to be made, the time would be reduced to eight years and the cost to sixty-four pounds[2]. By this deduction, therefore, the enclosure of a ten-acre field would cost six pounds and of a twenty-acre field eight pounds. The tenant of a farm of a hundred and sixty acres was presumed to need two ploughs, and therefore two ploughmen and two drivers, and Mackintosh of Borlum claimed that if these four were to work at ditching in summer and hedging in winter at the rate of two falls each per day devoted to this, that the work could be completed within sixteen years[3].

1. Maxwell. The Practical Husbandman, p. 399. Extract from a letter published in the Caledonian Mercury in 1757 - anonymous.
2. Mackintosh of Borlum, 1729, p. 10.
3. Mackintosh of Borlum, 1729. pp. 27 and 35.

Rather ingenuously Mackintosh of Borlum suggested that where cottars took the place of tenants, that they should help with enclosure, and would benefit from it, because their masters used to give them the furthest grounds most exposed to depradations of cattle[1].

The suggestion that there should be a fund from which money could be drawn to supply premiums for those who wished to enclose their grounds, was printed in The Practical Husbandman[2] and Maxwell himself suggested that if a tenant were poor or his lease short, that he should be allowed his expenses out of the rent, and charged interest perhaps at the rate of 5%[3]. Mackintosh of Borlum wished every tenant to have a lease of nineteen years, and to be free of services, except the provision of fuel, so that he should have security, and time to proceed with enclosure[4]. Lord Kames presented the view that was held by numbers of improvers in the mid-eighteenth century, that without a long lease it was vain to hope for an improving tenant. He accordingly encouraged the granting of long leases of a time certain, supposedly nineteen years or two nineteen years, with the addition of the life of the tenant in possession at the expiry of the time certain[5]. On this subject, Andrew Wight made what seems to be a reasonable suggestion, that when the tenant was required to improve at his own

1. Mackintosh of Borlum, 1729, pp. 119 to 121.
2. Maxwell. The Practical Husbandman. As for p. II.31, Footnote 1, p.398.
3. Maxwell. Ibid., p. 424.
4. Mackintosh of Borlum, 1729, p. 23.
5. Lord Kames. The Gentleman Farmer. Article 3, p. 414.

expense, that he should have nineteen years in which to enclose and nineteen years during which to reap the benefit of his improvements[1].

In The Practical Husbandman, Maxwell framed a specimen lease, whose clauses contained stipulations about enclosure of cultivated land, with or without allowance from rent, upkeep of fences by the tenant, adequate drainage, summer fallow, improvement of ridges and an approved cropping system[2]. Lord Kames was less strictly practical in his approach to this, and it may be of interest to summarise his "General Heads of a Lease for a Corn-farm"[3]. In the preamble he likens the proper binding of a tenant in a lease to the fettering of a British monarch, who has unbounded power to do good, and none to do mischief. He notes that different situations required different modes of husbandry, and that he could do no more than suggest a few general rules:

(1) A long lease should be granted, (as mentioned above).

(2) Assignees and subtenants ought to be excluded, for the rather strange reason that "where a tenant has it in his power to make his lease a subject of commerce, he will be sparing in laying out money on improvements."

(3) Whether the rent ought to be paid in corn or money, depends on circumstances. Corn-rent cramps the tenant, obliging him to sow yearly corn of the same kind with what he pays, but is advantageous to the landlord if there is a superfluity of corn for exportation, because he can manage the export of it better than the tenant. Money-rent promotes good culture, the benefit of good grain accruing entirely

1. Wight. Volumes on Husbandry. Vol. 5, Survey 8, p. 29.
2. Maxwell. The Practical Husbandman, p. 421.
3. Lord Kames. The Gentleman Farmer, Article 3, p. 413-419.

to the tenant, and by prudence and patience a tenant can draw a better price for his corns at the home market, than his landlord can.

(4) There should be a clause confining the tenant to a certain proportion of his land in corn, a third, for example, or a half. This must vary with local conditions. To give room for extraordinary improvements, on payment of a few shillings additional rent for every acre above the agreed proportion, an addition to the proportion of corn may be indulged.

(5) There should be a clause prohibiting white corn-crops to be taken in immediate succession.

(6) At the expiration of a lease, the tenant should be entitled to a second nineteen years, upon paying a fifth part more of rent, unless the landlord give him ten years purchase of that fifth part.

(7) Both landlord and tenant should share the upkeep of fences, the care of the hedges being entrusted to the landlord's hedger. Otherwise the tenant will be neglectful or careless.

(8) Certain spots proper for planting, whether for shelter, for beauty, or as not being arable, should be excepted from the lease. The landlord should enclose and plant, the tenant carrying the necessary stones. To encourage the tenant to preserve the trees he is to have the whole weedings, and he may also be permitted to plant trees and cut them for his own use.

(9) Certain errors of common law should be corrected..."a farm can never be prudently managed by a plurality; for there it holds, so many men so many minds." Thus one heir only should succeed in a lease. There should also be a reservation in the lease ensuring that the heir does not succeed merely to the bare lease, the whole stocking in such instances going to the other children.

(10) To render the removing of tenants at the expiration of a lease more easy and certain, there should be a clause permitting a further one, two or three years' tenure at an increased rent, but with the proviso that the tenant should be at liberty to remove at the end of the nineteen years, upon giving three months' notice.

Acting on behalf of the Society of Improvers, Maxwell gave well-considered advice and guidance to any landlord who sought the Society's aid. Taking account of such factors as soil, exposure and situation, he would take great pains to discover the treatment best suited to particular fields of an estate. He advocated the laying of a certain proportion of arable land in summer fallow and the enriching of exhausted land by letting it lie in grass for a period. The crop rotations which he recommended were enlightened, white crops being alternated with grasses or root crops such as turnips, potatoes, cabbages or carrots. He strongly advised the growing of turnips and was a keen supporter of Tull's methods of sowing turnips in drills, emphasising the benefits of cultivation of the crop for the pulverisation of the soil, for the nourishment of livestock, and for further enrichment of the soil by the manure of cattle or sheep eating turnips off the ground. According to Hamilton, the advertisement which he gave to Tull's methods caused them to be widely adopted in Scotland before they were in England[1]. Besides clover and other grasses, he encouraged the growing of lucerne and sainfoin, and recommended the inclusion of flax in rotations, where practicable. Mackintosh of Borlum listed four improvements which came from England, namely folds for cattle, sowing of pease, fallow (when the weakness of pease was discovered), and the final substitute of turnips[2]. Both he, in his essay of 1729, and Maxwell, at

1. H. Hamilton. The Industrial Revolution in Scotland, p. 44.
2. Mackintosh of Borlum. Essay, 1732, p. 340 and 341, Reprint by Maxwell.

least during the twenties, still laid considerable emphasis on fallow and the growth of pease. Mackintosh of Borlum suggested that a third part of arable land should lie fallow every year, that land should be prepared for this by being ditched and ploughed three times in summer, and that only two crops should be taken after fallow[1]. He spoke of the constant ploughing needed in France or Flanders for flax or hemp, and desired that each farmer should sow lint-seed on at least half an acre, each year[2]. Both Maxwell and Mackintosh of Borlum were well aware of the profits to be derived from animal husbandry. Maxwell advocated the fattening of black cattle and 'house-lamb' on all left-over foodstuffs, on turnips, cabbages, clover, oats, and pease, and the rearing of hogs and poultry[3]. Mackintosh of Borlum showed how by judicious feeding, one might have a return of twenty-five pounds on five oxen, after little more than a year's fattening[4]. Lord Kames wrote at a time when most farmers had learnt to appreciate the benefits of intelligent rotation of crops, but his chapter on rotation of crops was most comprehensive and included examples of different rotations practised in various parts of Britain, and on different types of soil. For the cultivation of a soil free of stones, he recommended the new chain plough introduced by James Small

1. Mackintosh of Borlum. Essay 1729, p. 51, 40 and 44.
2. Mackintosh of Borlum. Ibid., p. 239, 240 and 244.
3. Maxwell. The Practical Husbandman, p. 408.
4. Mackintosh of Borlum. Ibid., p. 169 to 172.

of Berwickshire about 1764, but still commended the Scots plough for breaking up stiff and rough ground[1]. In the controversy that was raging at the time of his writing, about the respective merits of the ox and the horse as draught animals, Lord Kames stoutly upheld the ox, and stated, rather surprisingly, that "There is not in agriculture any other improvement that equals the using oxen instead of horses[2]." Oxen were as tractable as horses, he maintained, and were both purchased and maintained at much less expense.

Maxwell was of the opinion that the arable and pasture parts of a farm should bear a reasonable proportion to one another, and divided his own farm of Cliftonhall near Edinburgh, which comprised about a hundred and thirty acres, into about ninety acres of arable land, and forty of pasture.[3] According to head number 4 quoted above, in his 'General Heads of a Lease for a Corn-farm', Lord Kames approved of a half or two-thirds of an arable farm lying in grass. In a discussion about the rent of an arable farm, he affirmed that if a tenant could not obtain more than three and a half bolls of corn per acre from his farm, that it would be more profitable for him to turn the whole farm into pasture[4]. The advantages of letting pasture land to graziers were appreciated in Maxwell's time, and he suggested that where a farm lay near a

1. Lord Kames. The Gentleman Farmer, p. 37 and 36.
2. Lord Kames. Ibid., p. 59.
3. Maxwell. The Practical Husbandman, p. 407.
4. Lord Kames. Ibid., p. 322.

populous city, far more profit might accrue from the proper management of sheep, than from tillage[1].

With regard to the improvement of ridges, Maxwell desired that each farmer should plough down all the ridges of each field into what he called a plain, then beginning at one side, should form new straight ridges making them consistently ten feet broad, and high enough for adequate drainage[2]. Such ridges could be ploughed in pairs. Lord Kames maintained that soils which suffered from lack of moisture should be tilled flat, ploughing from the circumference of a field in a continuous spiral towards the centre[3]. Clay soils on the other hand should be raised into proper ridges twelve feet wide and twenty inches high[4]. In medium and light soils, ridges should be so low as to admit the crowns and furrows to be changed alternately every crop. Cross-ploughing once or twice would reduce ground to a flat surface, and give opportunity to form ridges at will[5]. Lord Kames however, did not advocate the altering of ridges where the soil was strong clay, unless it could be done within a season. It is interesting to note that he refers to advice given in "Columella, Book 2, chap. 5," to direct furrows across a hill-slope, in the manner of modern contour-ploughing[6].

1. Maxwell, The Practical Husbandman, p. 159.
2. Maxwell. Ibid., p. 425.
3. Lord Kames. The Gentleman Farmer, p. 101.
4. Lord Kames. Ibid., p. 107.
5. Lord Kames. Ibid., p. 105.
6. Lord Kames. Ibid., p. 103.

Maxwell had little to say about the improvement of mosses and commented that few authors had touched on that subject[1]. Lord Kames undertook with considerable success, the reclamation of fifteen hundred acres of the Moss of Kincardine, but even he had little to say on the subject in The Gentleman Farmer, beyond recommending paring and burning, ploughing and cross-ploughing, manuring, and growing turnips as a first crop.[2]

It has already been stated that Maxwell considered that a farm should have one tenant and sufficient arable land for the work of a plough. Lord Kames devoted a chapter of his book to consideration of the proper size of a farm and the useful accommodation it ought to have[3]. He thought that a tenant should be confined to that quantity of land which could be managed to the best purpose with the least expense, and that the proper quantity was that sufficient for a plough. Naturally the size would vary according to type of husbandry, soil and availability of manure, but Lord Kames ventured to say that in most soils sixty acres of corn might be commanded by a single plough, provided the crops were distributed throughout the year. If a third part in grass was sufficient, the farm should be seventy-five acres, and if half of the farm was to be in grass, then the whole should be a hundred acres. Lord Kames favoured small farms employing but a single plough to

1. Maxwell. The Practical Husbandman, p. 429.
2. Lord Kames. The Gentleman Farmer, p. 98-101.
3. Lord Kames. Ibid., p. 304 to 314.

those employing two or three ploughs, with the exception of farmland in direct control of the proprietor. He maintained that small farms were those most eagerly sought after, and which therefore produced the highest rents, although admittedly in a country where building materials were costly, the construction of a number of houses proved costly to the landlord. His most cogent reason for preferring small farms was the higher standard of living and self-respect maintained by tenant farmers compared with day-labourers. He suggested that a mechanic, such as a wright, smith, mason or weaver, should have at least six acres of land for maintaining a horse and two cows, and that two mechanics should combine to provide themselves with a plough and team[1].

Mackintosh of Borlum quoted the saying of "sensible Farmers", that "If his Farm would yield five Times his Rent, the Tenant had no Reason to complain, that is, one Rent for his Master, one for Keeping up his Stock and working Gear, two for House-keeping and paying his Servants' Wages, and one to lay up for the sore Foot"[2]. Soon both master and tenant were to regard rent in quite another and more commercialised light. Many landlords were to disregard Lord Kames' injunction that "where a Tenant, by superior skill or extreme diligence, raises on an acre a bushel more than usual, the profit ought to be his own"; and many tenants were to discover

1. Lord Kames. The Gentleman Farmer, p. 312 to 314.
2. Mackintosh of Borlum. Essay 1729, p. 181.

that wealth was to be found "in land recently broken up from the state of nature, where there is scope for great and lasting improvements," if they could procure long and lenient leases[1]. Lord Kames' preference for rent being paid in money is mentioned under head 3, in 'General Heads of a Lease for a Corn-farm,' but as late as the end of the eighteenth century, contrary opinions were given. Buchan-Hepburn the author of the General View of East Lothian (1794), thought that the half of rent paid should be in kind, to spread the risk of a depreciation in the value of money[2]. In the twenties, account was being taken of the rent-paying capacity of different uses of land, and later in the century Topham referred to the fact that although Edinburgh people could let out pasture land at three pounds per acre, sheep and cattle on Arthur Seat and Calton Hill were being dispossessed to make way for the more profitable golf courses[3].

Such was advice offered to landowner and farmer. Whether it was acted upon or not, the theorists doubtless had considerable influence in fashioning the general trend of the enclosure movement, and their theories would reflect to a certain extent current ideas and ideals. The attitude adopted towards improvements was largely a personal matter, and landowners were to vary from absentee landlords to idealists such as Cockburn of Ormiston, who lost everything in their efforts to improve their

1. Lord Kames. The Gentleman Farmer, p. 319 and 323.
2. G. Buchan-Hepburn, General View of East Lothian, p. 127.
3. Topham. Letters from Edinburgh. (1774-75), p. 365 and 366.

estates and the lot of their tenantry. Some would be content at first with improving merely policies and mains farms, some would lay out their estates with complete disregard for tenants, and others would endeavour to be fair and considerate. New methods would be received eagerly by some farmers, while others would diffidently hesitate to commit their land to seemingly unproductive fallow, to occupy space with trees that might harbour birds and prevent the drying of their corn, or to grow 'beast's meat' at the expense of 'man's meat'.

CH III - STRATHMORE

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For the readers convenience the paragraphs summarising the evidence. the working hypothesis. and the findings are marked S

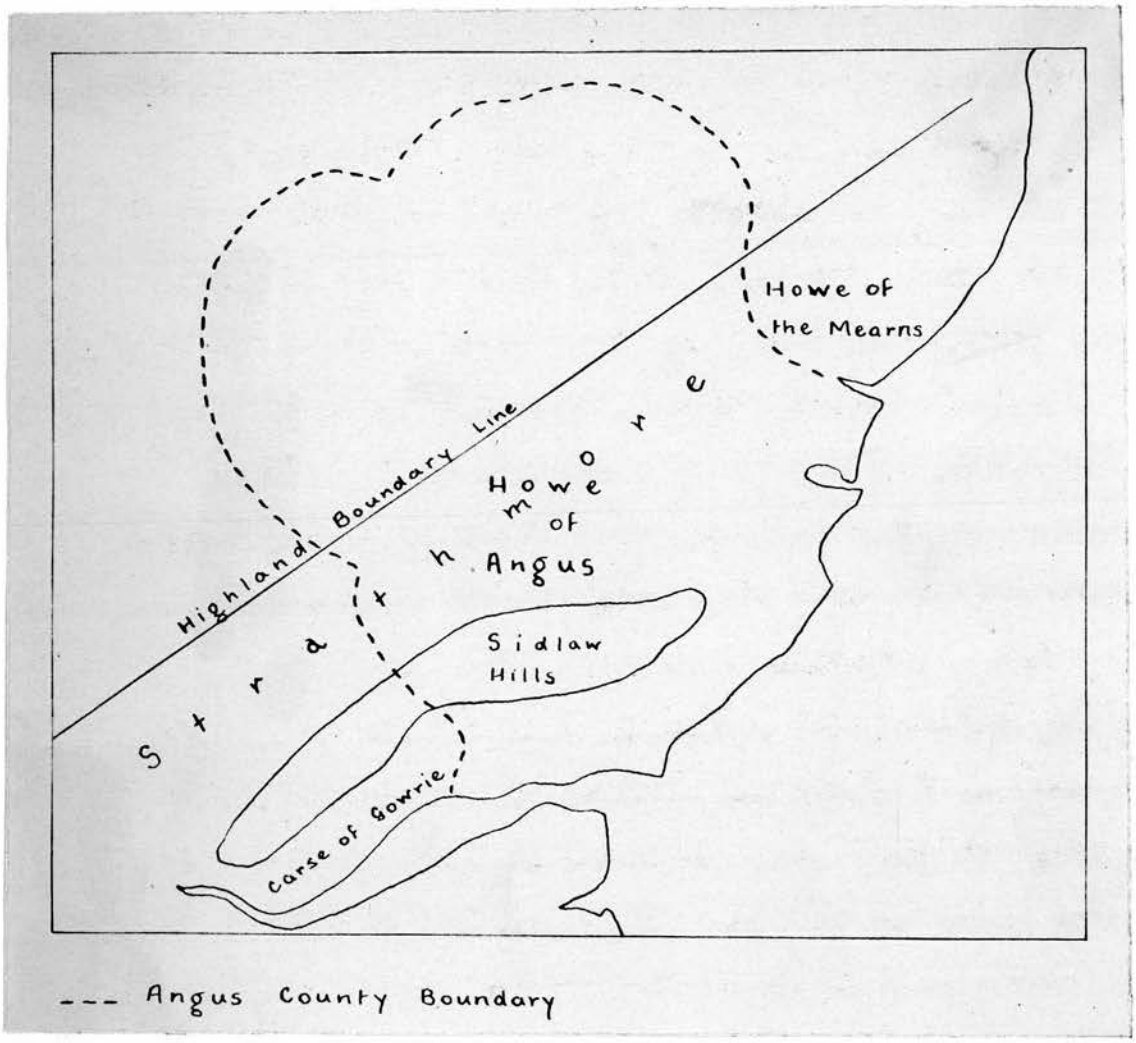

Howe of the Mearns
Highland Boundary Line
Howe of the Mearns
Strath Angus
Sidlaw Hills
Strathmore
Carse of Gowrie
--- Angus County Boundary

Fig. III.3.

STRATHMORE.

From a vantage point on the Sidlaw Hills, the fertile Corridor of Strathmore can be seen, stretching as far as the eye can see. (See Fig. III, _). The fate of this early chosen seat of kings and abbots, has been interwoven with that of the bordering mountain glens, that extend northwards from it like projecting fingers. Even more so has it been connected with the coastal lowland, from the place of its emergence seawards, as Howe of the Mearns, to the narrow plain bordering the Tay Estuary, from which it is separated by the Sidlaw Hills. (See Fig. III, _). When highland glen, lowland strath and progressive coastal plain are found in juxtaposition, it would be unwise to concentrate solely on the development of the central region, to the exclusion of the other two. In this case, emphasis is laid on that part of Strathmore known as the Howe of Angus, but reference is made to the other regions in so far as they influence, or are related to the development of the Howe (See Fig. III, 3.).

The eighteenth century improvers who laboured here with unsurpassed enthusiasm, would have been entranced by the present prospect of Strathmore. In summer especially, it presents a regular patchwork, vivid with the colours of cultivation, mellowed and enhanced by a profusion of both hard and softwood trees. It is long since the "stony-culturists"[1]

1. Robertson. General View of Kincardineshire, p. 311.

might have been seen attacking barren moor and stony boulder-clay waste, with the aid of highland labourers, armed with pick, spade, and even gunpowder: or since oxen pulled the endless stream of wooden carriages or "wains", that rumbled over miles of rough roads, laden with life-giving marl or lime for the fields. Indeed there are patches of moorland today that have reverted since those days of unremitting, if misplaced toil.

There was much, however, to encourage the improvers. The rolling nature of the country and the entrenchment of most of the streams, obviated serious drainage problems, while the central string of lochs contained rich reserves of marl - although there was generally a lack of wood, lime and coal. This was by comparison a region of plenty, having long been noted for its cattle and export of grain to other parts of Scotland, and abroad. Indeed, complaint was made that an effect of Union legislation was the restriction of grain export to nearer districts. There was moreover a thriving and well-established linen industry, based partly on home-grown flax, that was to give Forfar the lead in the seventeen-seventies at the time when linen was our staple industry. Through both of these activities, contacts with other parts were maintained, and a general alertness stimulated. Part-time spinners and weavers provided a welcome labour supply, and the growing towns with their factories and manifold burgh acres, could absorb those dispossessed of land.

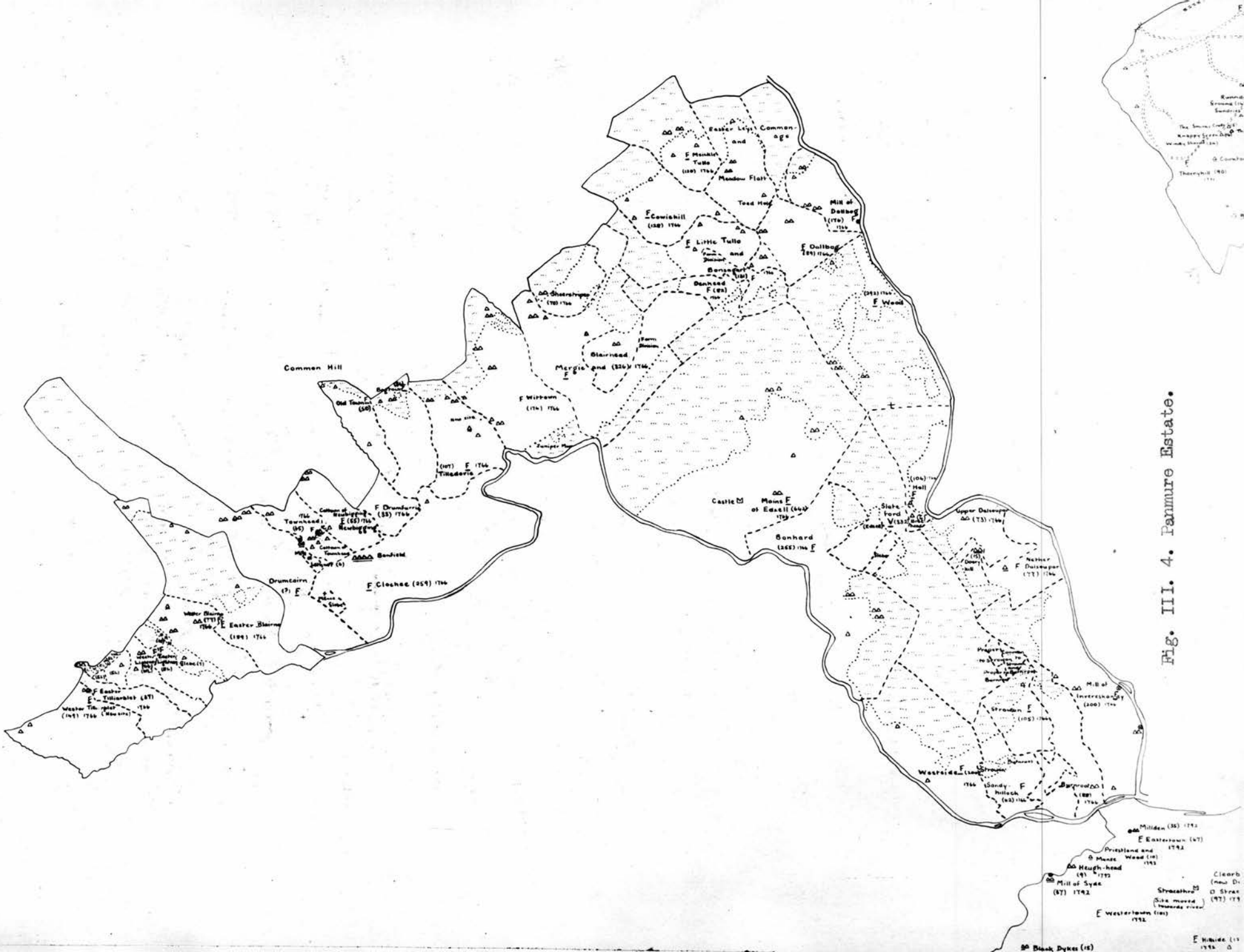


Fig. III. 4. Panmure Estate.

In Angus generally there was an abundant population at the commencement of the eighteenth century, and this vital factor colours the whole agricultural economy. The highland glens held a reservoir of men who burst forth periodically when physically or land hungry, to make seasonal foray on the lowland or look for permanent settlement. Old drove roads ran through Strathmore, and the vale and coastal plain were important zones of movement, with thriving nodal towns. Runrig by its nature was an elastic system, but there is evidence that at times it had been severely strained. The plans reveal a multitude of cot-towns and scattered cottages, and "newtowns" appear to have been common in the seventeenth century. The Panmure estate plans of the 1760's show a close pattern of fermtouns, and smallholdings scattered along the moorland fringes, and yet the Edzell parish minister remarked that his parish in the previous century had held many more people, and that villages and numbers of farms had disappeared and given way to moorland[1]. (See Fig. III,4). As one would suspect along this northern hillfoot zone, it is stated in the same account that many of the inhabitants were Scots from elsewhere[2]. Throughout the whole region the small farmer, and cottar had a very real place, not to be disregarded easily. Not only did smallholdings and cot-acres cover a considerable proportion of the land, but also the labour of

1. Old Statistical Account, Vol. X, p. 160.
2. Ibid., p. 110.

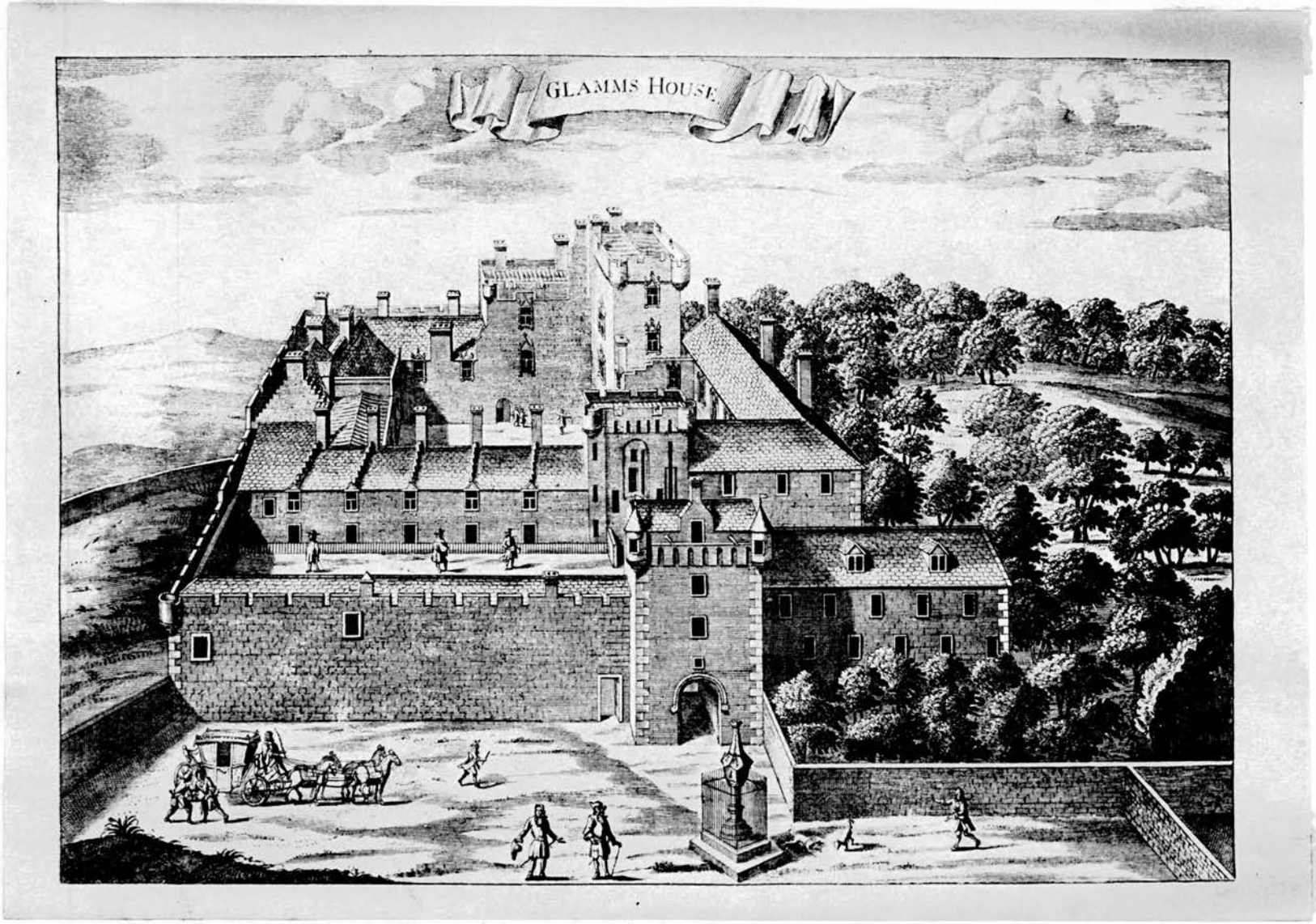


Fig. III.5. From the original by Slezer, c. 1694.

large numbers was essential on the extremely large farms of fertile grain-growing districts, and to the sweeping improvements made on larger estates.

With these inherent advantages, and the capital of the larger landowners, improvements began early, and made steady progress. Auchterlony, writing at some time between 1683 and 1722[1], commented on the excellent parks, enclosures, hay meadows and planting of Glamis Castle environs, and certainly the Mains of Glamis was efficiently enclosed by the 1740's. (See Fig. III, 5). Some thirty years afterwards, Wight, (though in the early stages of his review) declared that Lord Strathmore's improvements " far surpass any other that were ever carried on in Scotland"[2]. To the east of Forfar, George Dempster who ranks with the foremost improving spirits of his time, founded the earliest farming society in the county, the Lunan and Vinney Water Society"[3] and the effects of that can be seen, on the Index Map. (See Folder ¼.). Two brothers Scott who farmed the low-lying rich clays near Montrose, were influenced by the East Lothian improvers such as Cockburn of Ormiston, one of them being one of the twelve members of the East Lothian Society who were not of that county[4]. Together they began to improve their farms, about 1740, and to set the improving fashion, in that district.

1. Macfarlane's Geographical Collections, Vol. 2., (Scottish History Society), p. 26.
2. Wight, 1778. Vol. 1, Forfar County, p. 287.
3. Headrick. Agricultural Report of Forfarshire. 1813. p.564. No date can be discovered.
4. Robertson. Agricultural Report of Kincardine, 1813, p. 314.

THE OLD LANDSCAPE.

One may imagine a peasant crossing the Sidlaw tracks in the spring of 1740, his horse bearing coal from Dundee for his master's fireplace. He must have looked down on the broad strath and mountains beyond, and found the view neither monotonous nor unduly bleak, perhaps even "uncommonly pleasant" as a minister later described his unimproved parish. His eye would catch the moorland ridges, and lowlands too, splashed with the bright yellow of the whins, while on the mosses or mires he might discern a glint of water, and the peat stacks already rising. He and his fellows would spend much of the summer collecting and carrying whin and peat fuel. Everywhere he would see spreads of reddish-brown earth, the rigs giving the appearance of a mosaic of ribbed fragments, with here and there, amongst the fields, patches of blue flax flowers. Strings of eight or ten oxen pulling the wooden plough would look diminutive in the distance, and the huddles of low, thatched fermtouns inconspicuous and humble, when contrasted with the tree-fringed castles and mansions. If roads were apparent at all, they must have looked like winding threads always converging on some mansion, market, kirk or mill, the whole giving the effect of interwoven spider's webs. Amongst the little yards of some cot-town, our peasant might discover his own, and his gaze travelling to the strange new dykes enclosing his master's mains farm, he would go on his way wondering.

To the north and west as one progressed into the foothills and glens, the countryside became both more bleak and more backward, a difference that was to become more pronounced as improvement proceeded. It is significant that both in the Howe of Angus and the coastal plain, the emphasis of commentators at the end of the eighteenth century, was placed rather on the progress of improvements, than on regrets about surviving runrig and its evils - if the continuance of onerous "feudal services" be excepted. Thus the dynamic character of landscape must be borne in mind, and the relatively high degree of progress towards a new order which had been achieved in this region, before the commencement of the enclosure movement. The plans indeed reveal every gradation of runrig from excessive fragmentation and possibly movable runrig, through runridge of block possessions, to the farm shared by two tenants in almost separate entities, and even the single tenancy with subtenants.

The diversity of runrig types may be attributed in part to the same factors which complicated the land-use pattern, causing alternations of infield with outfield land, and of arable land with moorland, meadow and bog. Of these factors, variation in glacial deposits is the most significant, but overriding minor differences are the broad features which gave regional unity. Red sandstone underlying most of the lowlands of the region, contributes colour and fertility to the soils, and the prevailing contours of Strathmore are smooth and gentle, the actual valley floor never rising above

two hundred and fifty feet, and few of the whale-backed, north-east trending ridges which diversify the region, reaching above five hundred feet until the foothill region is reached. The preponderance of southward falling slopes and the shelter of the Sidlaw Hills in the case of the coastal plain, and Grampians in the case of Strathmore, contribute towards the geniality of the climate. This naturally varies from sea level inland, and is reflected in proportions grown of such crops as wheat and barley, but over the greater part of the Howe of Angus both these crops flourish, while the scattered market gardens with their rows of raspberry and other small fruit bushes bear witness to the kindliness of the climate.

The unifying human factor was the linen industry. At least one member of nearly every household was engaged in spinning or weaving. Contact was maintained between spinners and weavers, and thus directly or indirectly with the nearest market town, and ultimately with Dundee, Arbroath or Montrose.

Farm Patterns and Settlement Sites

The north-east to south-west grain of the country was reflected in a less particular manner than it is today, in the direction of field and farm boundaries. Rigs followed the slope of local irregularities, and farms were aligned towards valued mosses and moors. Where moors were found stretching along the rounded summits of ridges, then farms commonly did lie at right angles to the prevailing trend.

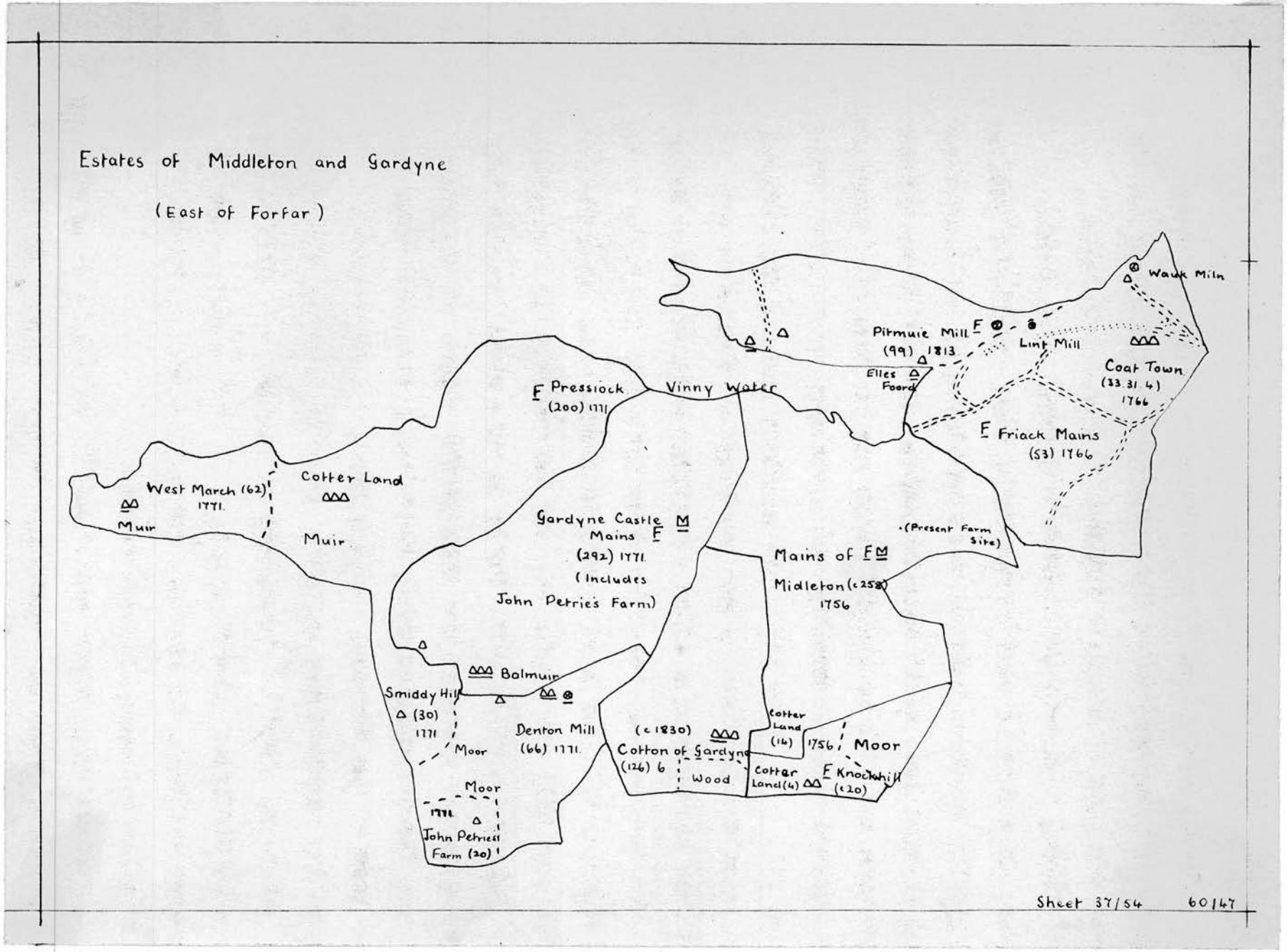


Fig. III.7. Estates of Middleton and Gardyne.

In the central section of the Howe of Angus, where there is a succession of low river haughs and fairly gentle slopes rising to moorland ridges, we find strip farms stretching from moorland summit to river. Such farms, lying in a fertile part of the Vale, were frequently large,, extending to three hundred and more acres, of which moorland and pasture land might comprise half. The old links between fermtoun and hill or ridge section may be seen well exemplified by related nomenclature, to the south-west of Glamis. (See Fig. III, 6—). Here where the northern edge of the Sidlaws abuts on the low land to the southwest of Glamis we see various sections of a ridge so related with the farms lying at the foot of it. There is Nevay Park Hill for Nevay Park, East Nevay Hill for East Nevay, Balkeerie Hill for Balkeerie, Ingliston Hill for Ingliston, and Balgownie Muir Plantation for Balgownie. Farm settlements in this strip type of farm were commonly found at the foot of the ridge, at the edge of the flood-plain, or where there was a river terrace, on the brow of the terrace. (See Folder, 4 - Photostat). Where the moorland was suitable for colonisation, muirhouses or cot-towns might be found, and in the case of smaller estates such as Middleton (See Fig. III, 7.), it was common for the mansion and mains to lie near the main stream, with the cottar land at some distance behind.

Smaller strip farms were found in the parishes of Edzell and Lethnot. Near the confluence of West Water with the North Esk, three narrow strips - Burnroot (88 acres), Strowan (105

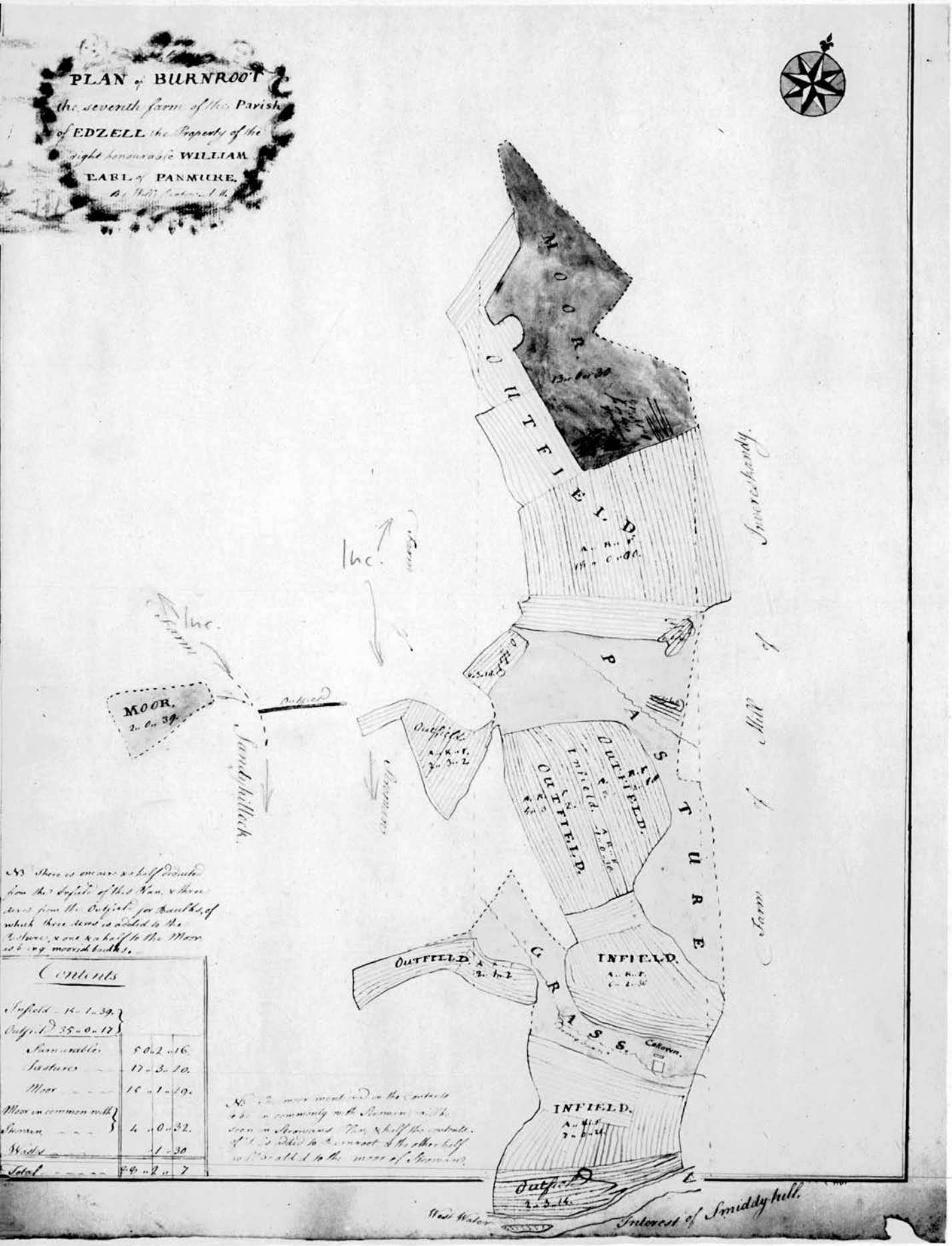


Fig. III.8. Burnroot Farm, Edzell Parish, Angus.
Strip farm stretching from moorland to river, with small possessions in adjacent farms.

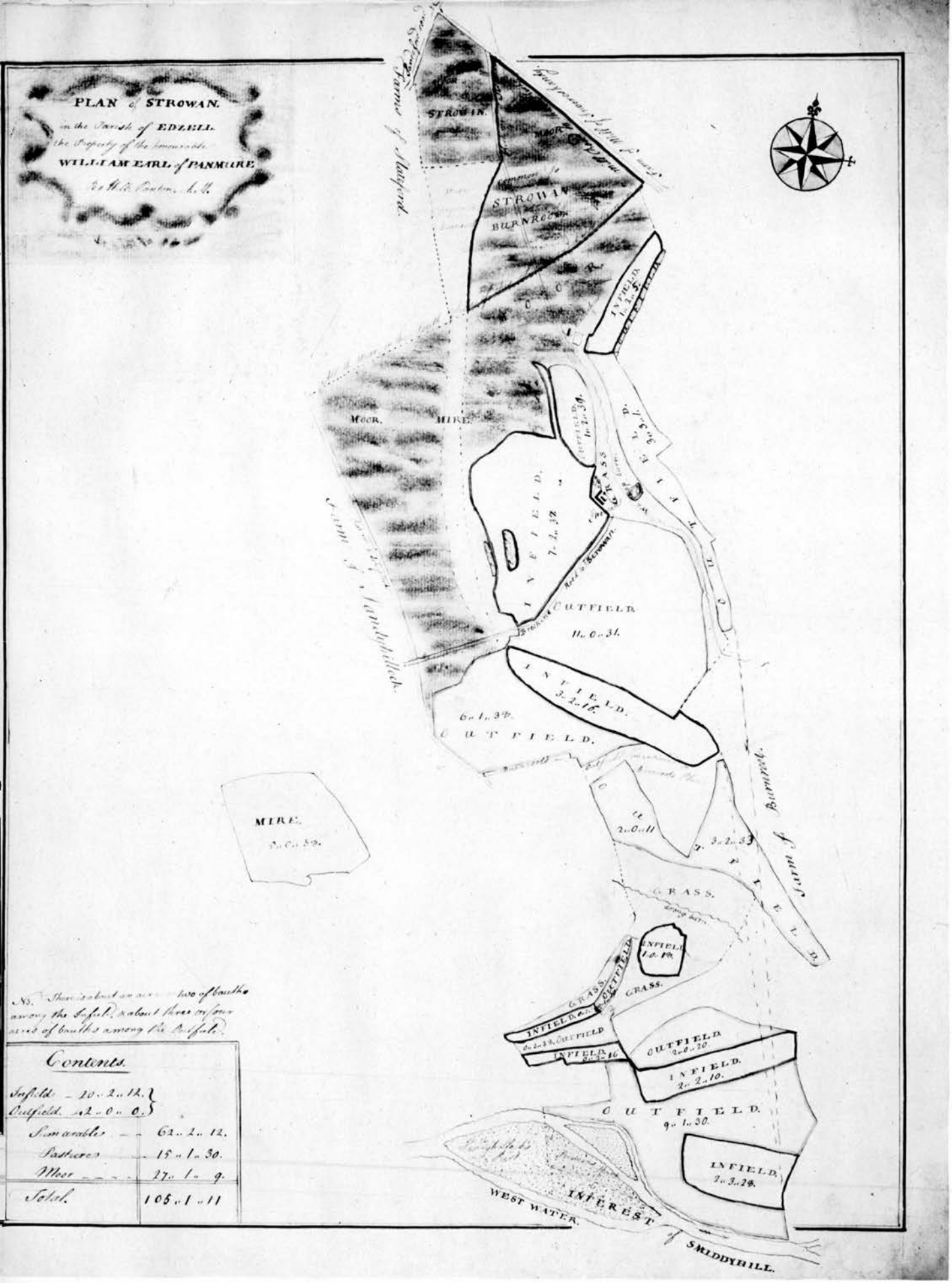


Fig. III.9. Strowan Farm, Edzell Parish, Angus.
Strip farm adjacent to Burnroot (III. **8.**), severed by the possessions of that farm.

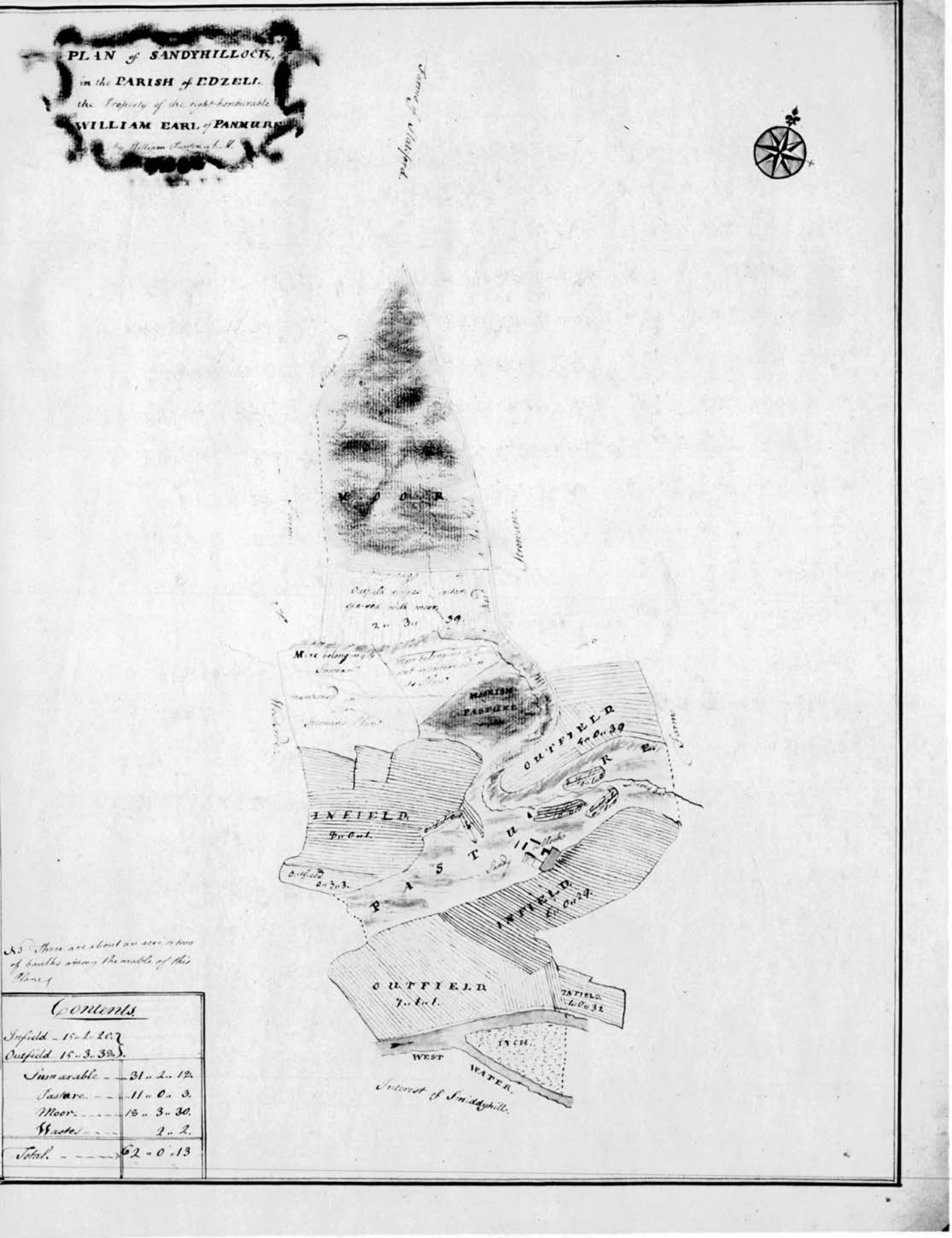


Fig. III.10. Sandyhillock Farm, Edzell Parish, Angus.
Strip farm adjacent to Strowan (III9) Note rundale of farm possessions.

acres) and Sandyhillock (62 acres) - ran from the water front inland to the moors, their respective possessions not entirely disentangled from each other, in 1766. (See Figs III 8. 9 and 10). The same development is widespread along the hillfoot regions of these parishes, and here a number of the strips contained less than fifty acres. Each had a frontage on the common grazing above the head dyke, and commonly a loan ran straight up the slope towards it from the fermtoun which was usually centrally situated. (See Fig. III, 32 p 43). Hilltown of Pitcurr was a row of strip smallholdings shown in a similar position on the plan of Hallyburton, the cottages standing in a row at the foot of the slope. (See Folder, 2 - Map).

There is a reference in the Kinnordy estate documents (Note 1796) to certain small possessions in Glenisla having an "exclusive property in as much of the hill north from them as overlooks their land, which is called a fronting", and this implies an alignment similar to the other foothill strips.

Some of the flatter areas of the Strath were pitted with moss and bog, and others that were better drained were inherently fertile and well suited to grain production. Of the more fertile districts two are conspicuous, namely the lowland comprising parts of the parishes of Meigle, Newtyle, Kettins and Coupar Angus, and that in the vicinity of Montrose. Here farms were often large and compact, with the fermtouns centrally situated, and it is to be observed that these regions developed certain features in common as enclosure proceeded. (See Fig. III, 11.

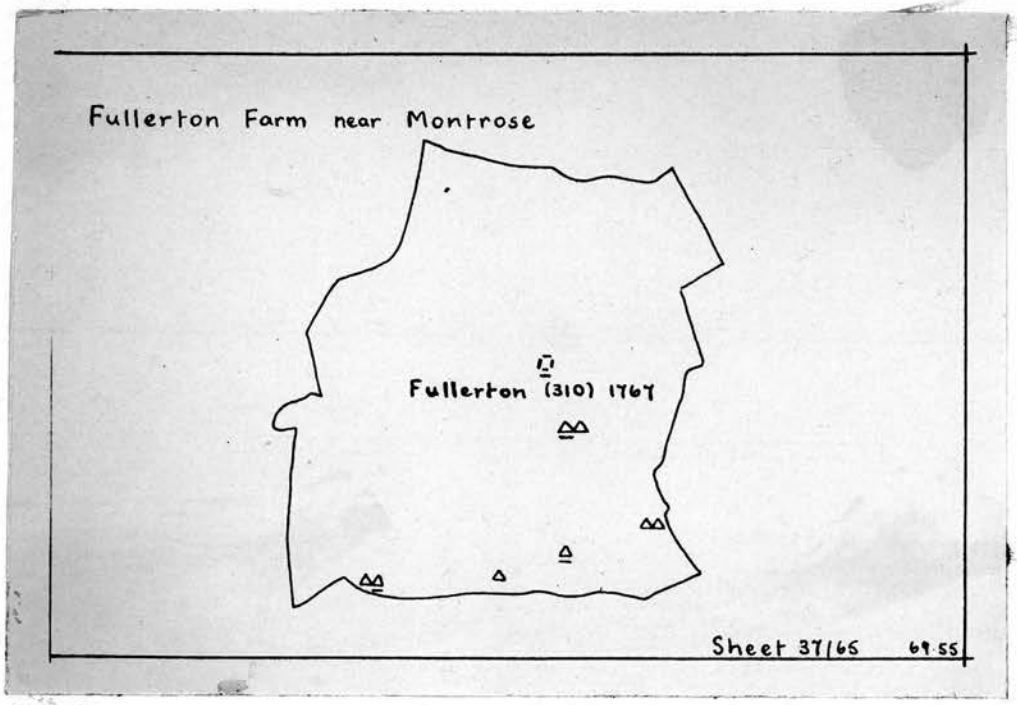


Fig. III. 11. Fullerton Farm, Maryton Parish, Angus.

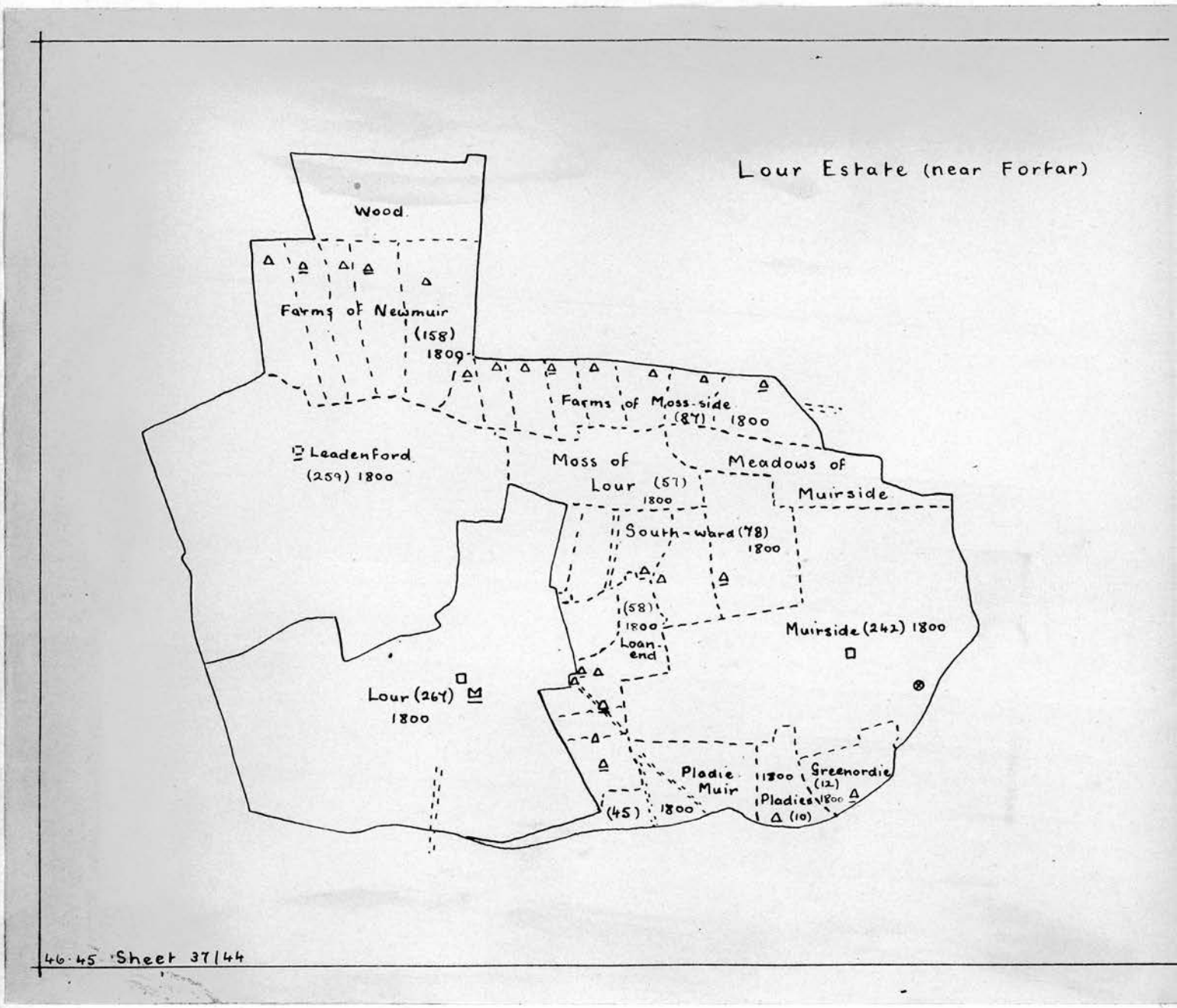


Fig. III. 13. Lour Estate, Forfar Parish, Angus,

Note smallholdings lying runrig beside Lour Policies, smallholdings lining the tributary stream that forms the southern boundary, and colonisation of the mosses.

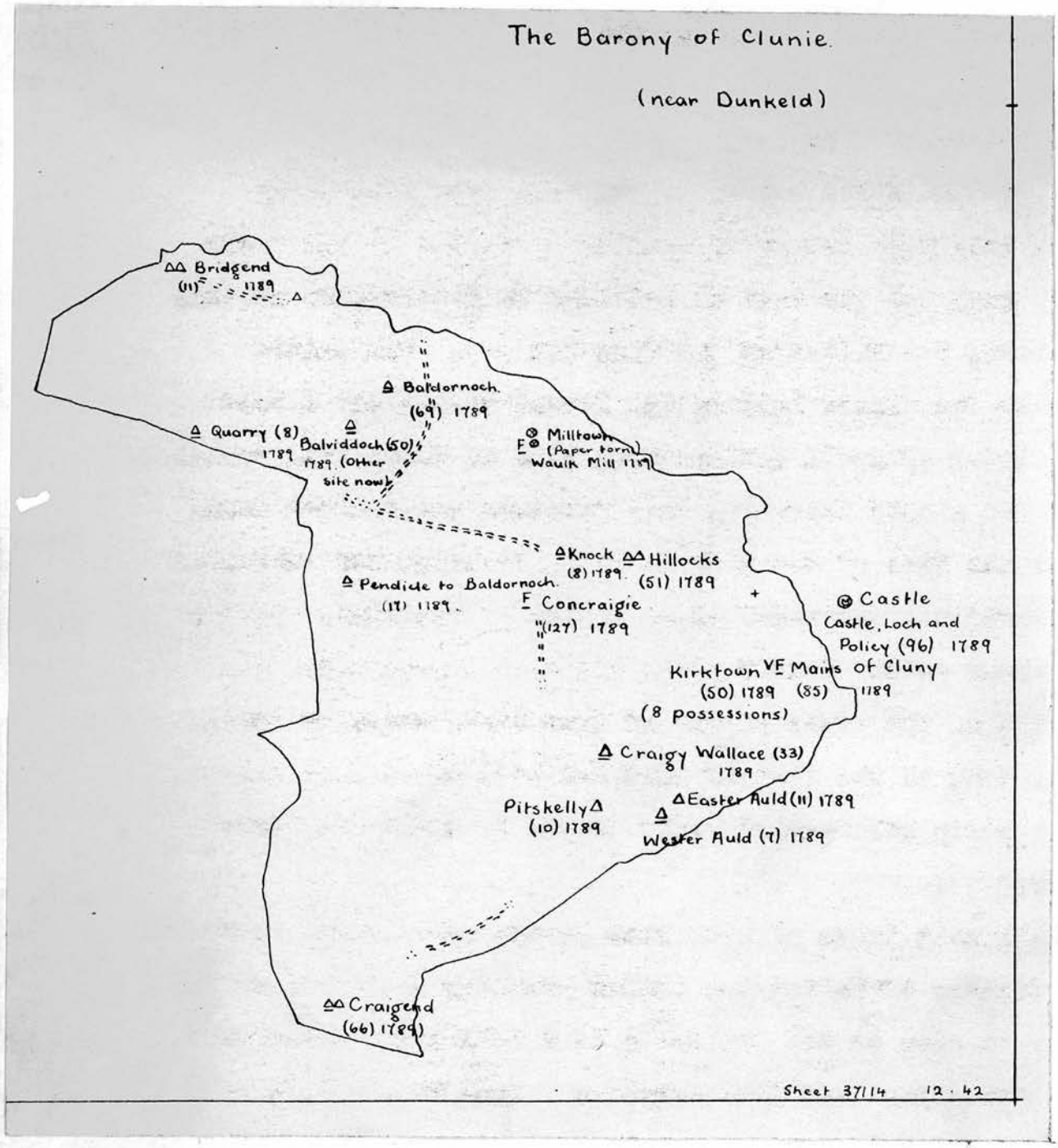


Fig. III.14. Clunie, Clunie Parish, Perthshire.

(and Folder, 2 - Map).

Where flat stretches of bog or moss were flanked by uplands, they were naturally shunned in favour of the lower slopes. Such was the case at Balbegno in Fettercairn parish. (See Folder, 5 - Photostat and ~~Fig. III 12.~~ Folder - 3.). The castle stood near the marshy land on the lowest slopes and a road with a string of small settlements, both of which have vanished, crossed the slopes above it, thus avoiding the flatter land, where at the time of the plan in 1771, draining and enclosing were proceeding, untrammelled by a load of tenantry. In the case of Lour estate near Forfar, the mansion and principal farms were on the lower slopes of Lour Hill, while by 1800, moss and moor on the flatter land had been split into numbers of small strip holdings at right angles to the road. (See Fig. III, 13).

Small unit farms of less than twenty acres might be found on the fringes of an estate, lining bounding tributary valleys. Such may be seen on the two and a half inch scale tracings of Clunie, Stracathro and Lour estates. (See Figs III, 14. 15 & 13. and Folder-3.) This seems a fairly natural development on the outskirts, where competition would be less severe.

"Farm houses are frequently to be seen injudiciously exposed on the top of a hill, or sunk in the damp of a bog. But the cottages are generally placed in warm and dry situations - in the recess of a glen - by the side of a streamlet, in corners and sides of plantations. Even when erected on a muir, a

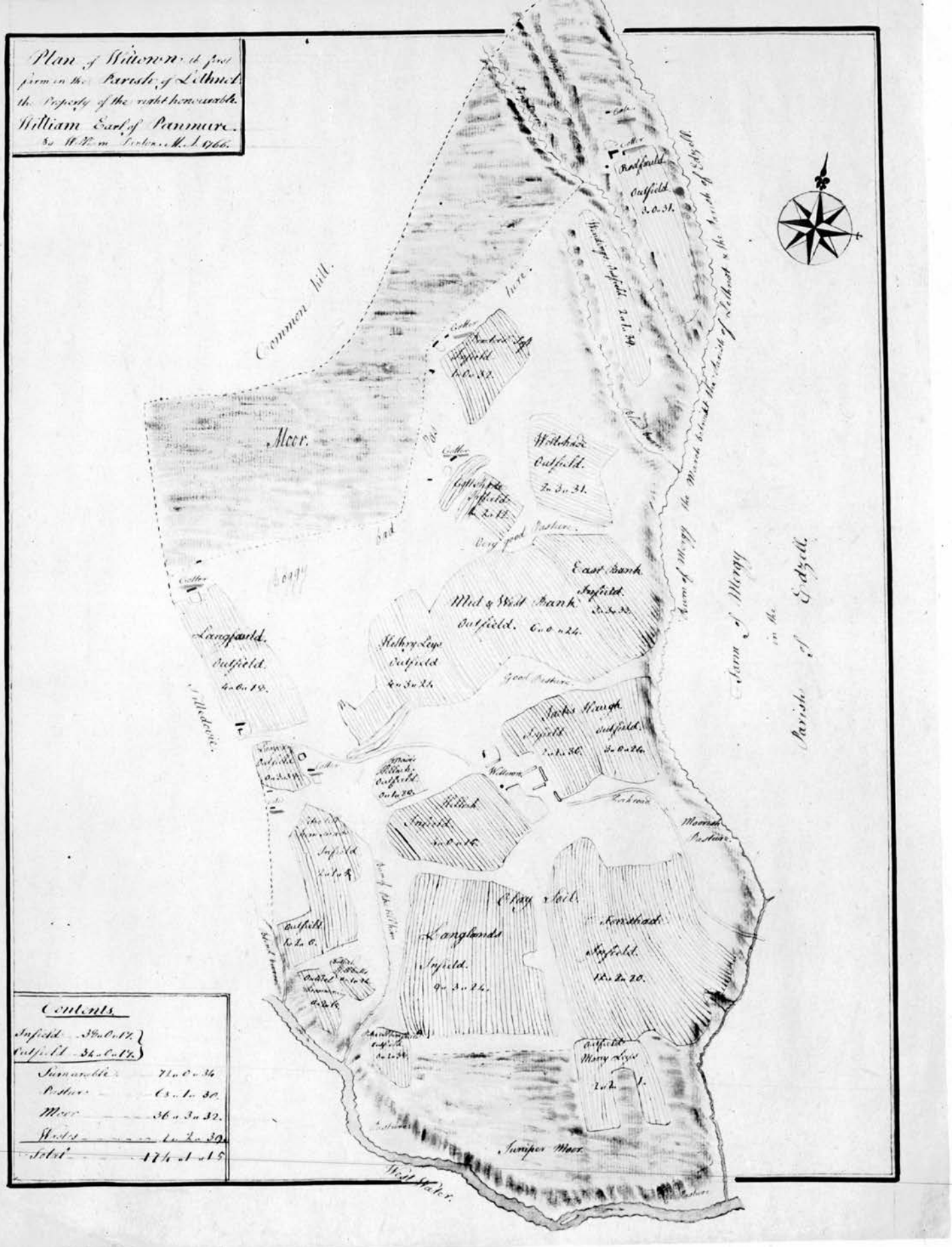


Fig. III.16. Wittown Farm, Lethnot Parish, Angus.

Cottar settlements on the moorland edge.

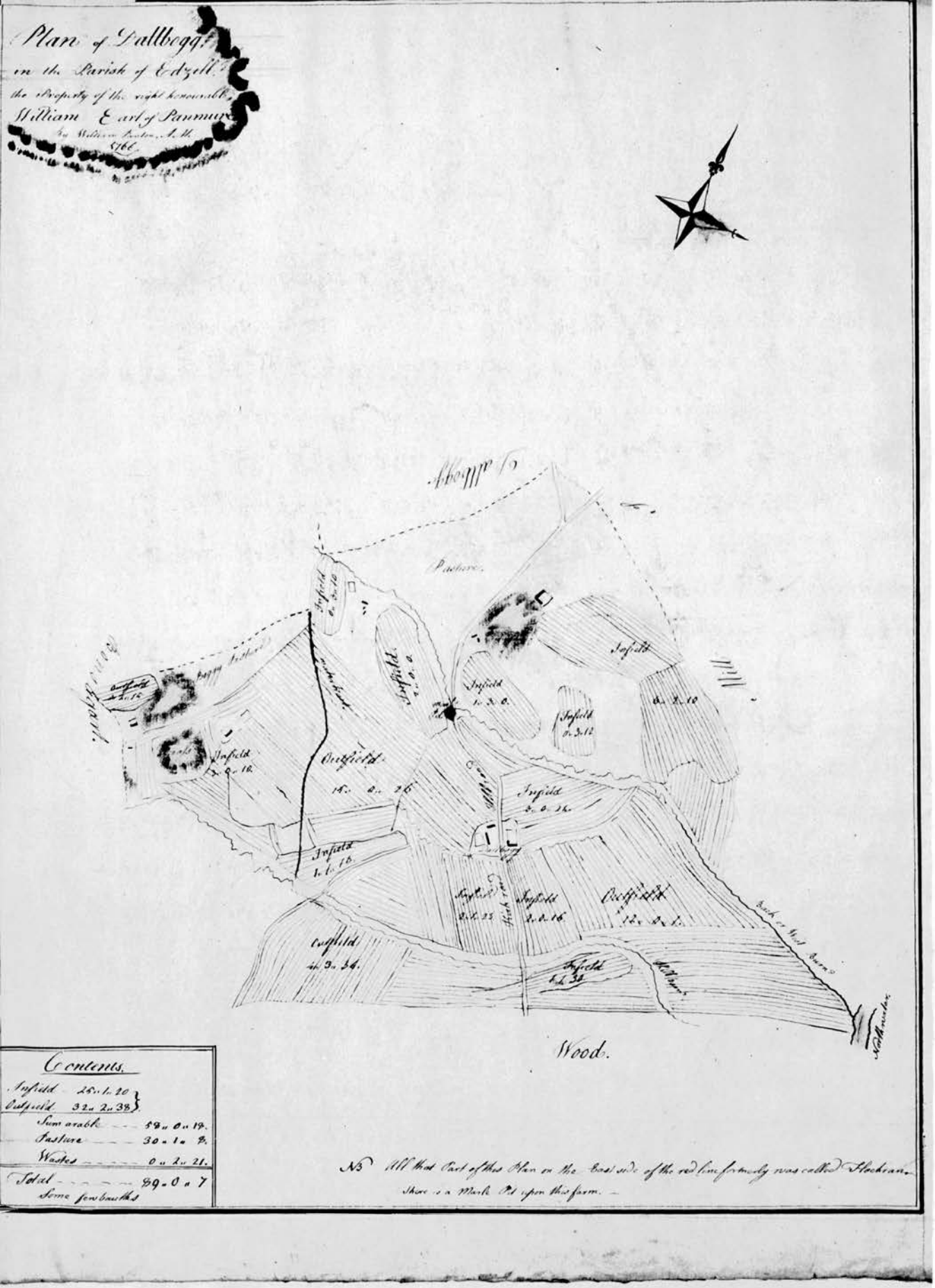


Fig. III.17. Dallbog Farm, Edzell Parish, Angus.

Cottar dwellings on the lower slopes of drumlins.

situation which many choose, for the sake of firing, care is taken that they be sheltered and decorated..."[1] The site of the fermtoun on the majority of the Panmure Estate farms was on reputed grass or pasture-land, which may or may not have been well drained. (See Figs III, 8, 9 and 10). It is understandable that the smallholder, with less territory to control, where free to choose the site of his cottage, would seek a sheltered spot, if possible near water and fuel. The cottar who was part craftsman and semi-independent, might choose to live by the roadside as near as possible to his local market, or since fuel constituted a real problem, on the verge of moor or moss. Nowhere is this better illustrated than on the Panmure Estate in Edzell, Lethnot and Navar parishes. (See Fig. III, 16). In these parishes a total of some seventy cottar dwellings, no longer in existence, has been counted, along the moorland fringe, frequently where a road or track crossed it. (See Folder, 3 - Map). There cottars were commonly found in small groups of two or three, usually irregularly placed in relation to each other. Sometimes, as in the case of Dallbog Farm each cottar's house might be in the lea of his particular glacial mound or drumlin (See Fig. III, 17). These rude little cots of stone and turf, bowed down under their thatch roofs to look like low haystacks, and with their little windows deeply set, may have looked as unobtrusive, even secretive, as those that may be seen today, for instance in

1. Robertson, 1813, p. 185.

Fig. III 18.

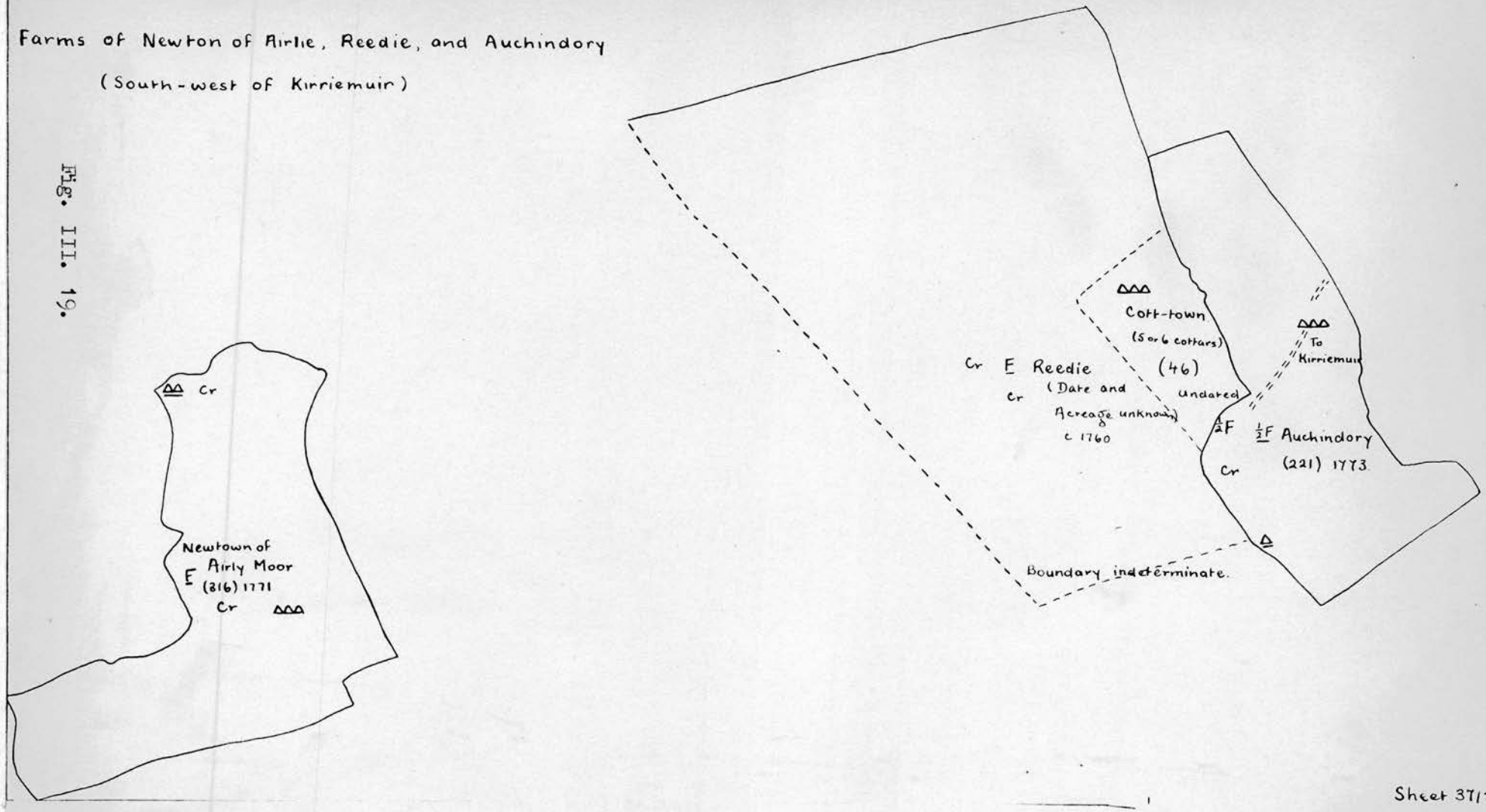
Primitive cottage, now uninhabited,

photographed in the Island of Barra.

Farms of Newton of Airlie, Reedie, and Auchindory

(South-west of Kirriemuir)

Fig. III. 19.



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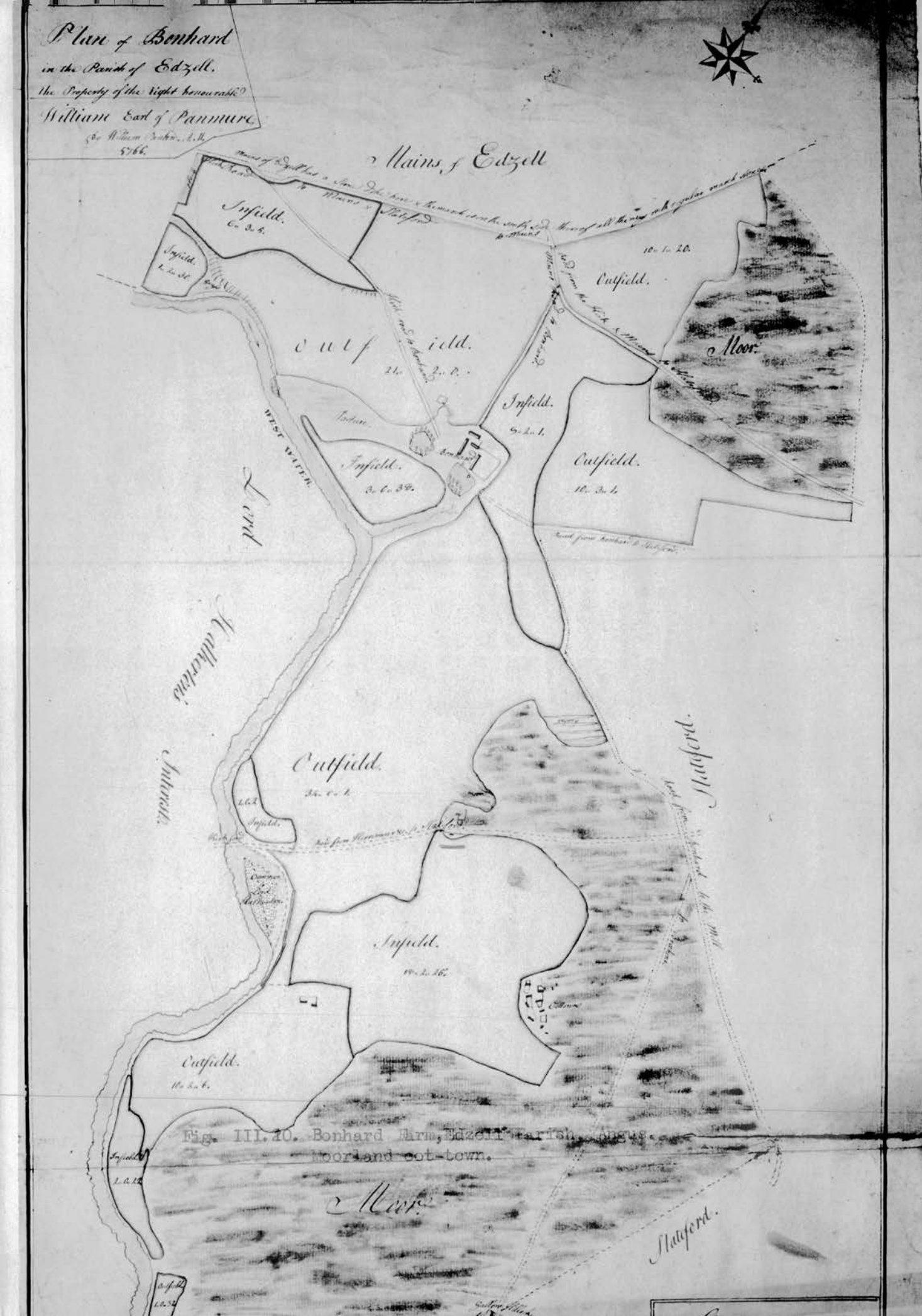

Plan of Bonhard
in the Parish of Edzell.
the Property of the right honourable
William Earl of Panmure.
by William Crokat. A.M.
1766.
Mains of Edzell
Infield.
Outfield.
Moor.
West Water
Esk
Slatsford.
Fig. III.10. Bonhard Farm, Edzell parish, Angus.
Moorland cot-town.

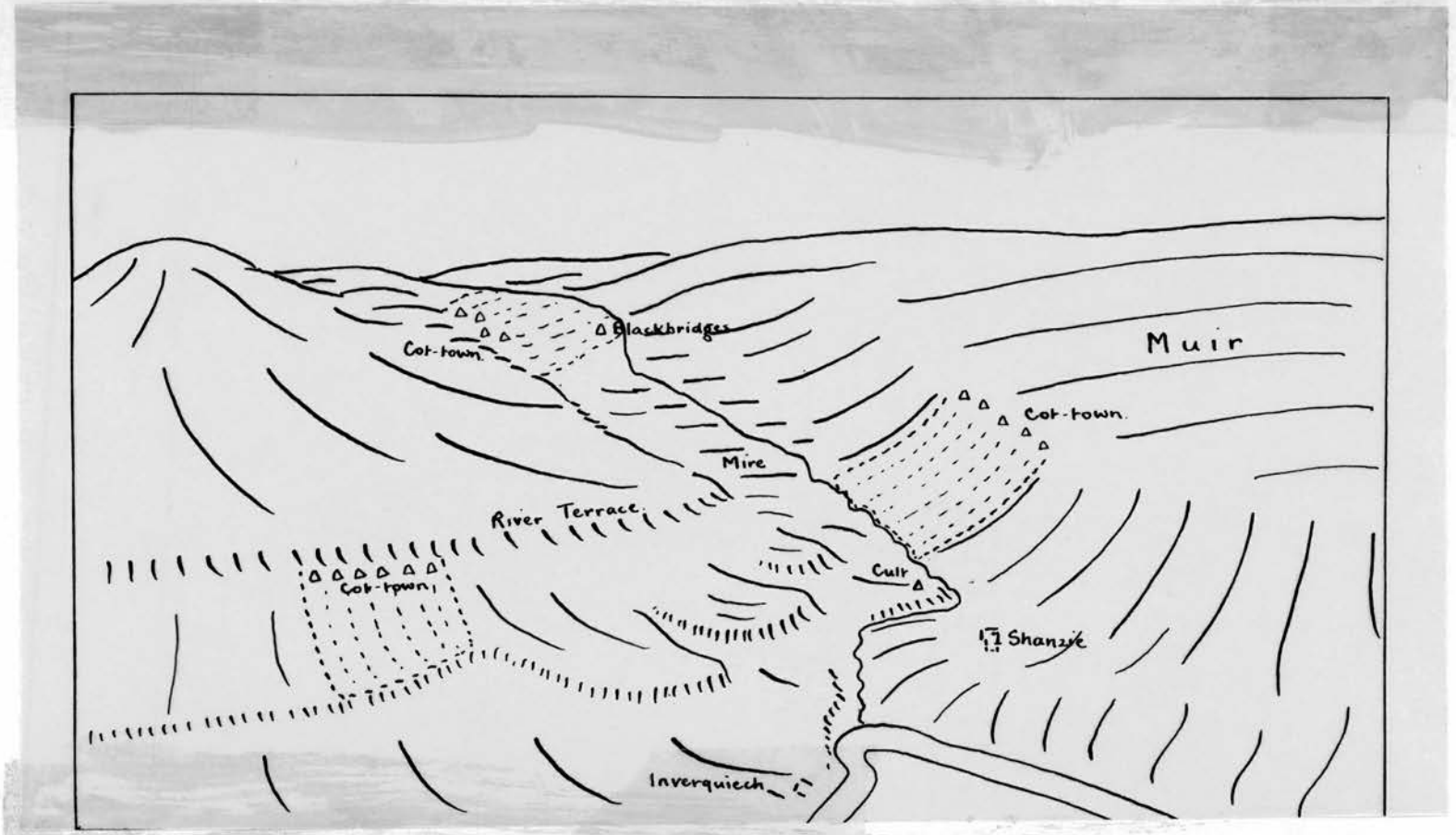


Fig. III.21. Diagram showing the position of cot-towns and cottar-lands in the farms of Shanzie and Inverqueich, Alyth Parish, Perthshire. 1772.

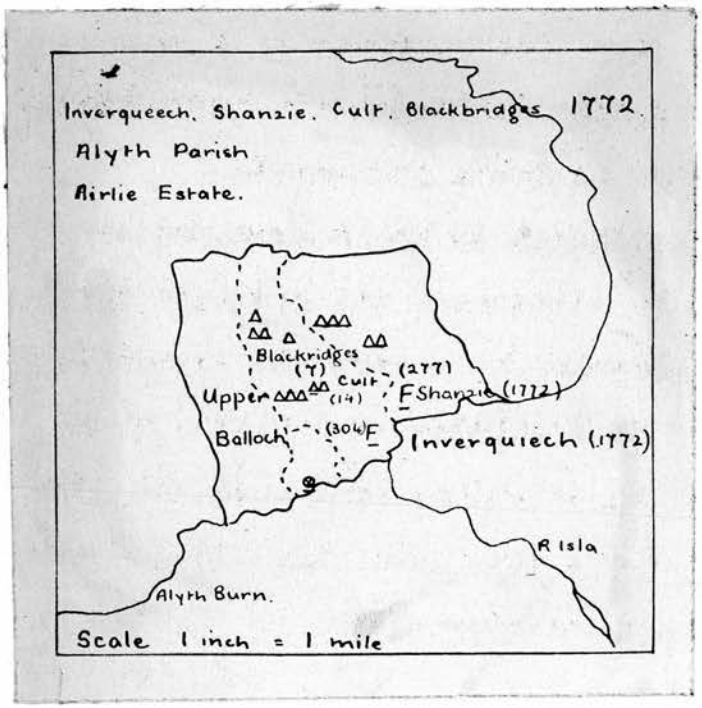


Fig. III.22. Farms in Alyth Parish, Perthshire.

certain parts of the island of Barra. (See Fig. III, 18). Robertson however declares that the more independent cottars built their own houses, and would often decorate them with honeysuckle or ivy, aspiring also to cherry and apple trees, gooseberry and currant bushes in their kail-yards[1].

The Cottars who were cottagers to their landlord or tenant farmer, often lived in cot-towns, set down and fairly regularly disposed by the superior in a position convenient to him. Headrick advocated the building of villages in a dry situation, rather than the cot-towns of the farmer[2], thus inferring that these settlements were sometimes placed in worthless marshy ground. Estate plans show cot-towns of more than a few cottars, on the fringe of a mains farm. (See Fig. III, 7, p 8), strung along a road as on Reedie farm (Glamis Estate), (See Fig. III, 19), or on the fringe of moorland (See Fig. III, 20), and by the side of a road. (See Folder, 6 - Photostat). Three cot-towns are shown on the photostat of farms in Alyth parish, all commanding stretches of a tributary valley. Two of these are strung out along the foot of river terraces, and the third overlooks the valley slope from the moorland crest. (See Fig. III, 21).

S In general review therefore, we see a pattern of farms and settlements out of harmony with the spirit or usual practice of co-operative runrig. The two and a half inch scale

1. Robertson, 1813, p. 185.
2. Headrick, 1813, p. 137.

5 contd. tracings made from the estate plans show farms of all sizes intermingled, from the self-contained croft of some ten acres to the farm as large as five or six hundred acres. Rentals reveal that the largest farms might be tenanted by as few as three or four substantial tenants, and those of three hundred acres or less, by two tenants or even by one. Indeed on Glamis estate at the beginning of the eighteenth century the farm of Drumgley commanded six ploughs, but was tenanted by only four tenants[1]. The same tendency towards individualism continued down to the crofters on their fringing farms and the cottars in their ones and twos on the moors. Thus, although the spirit of good neighbourhood might prevail, in many cases a farmer would be more dependent on his superior or his inferiors, than on his equals.

S Doubtless a region which is potentially fertile offered opportunities for an ambitious tenant to prosper and increase his possessions, even when labouring under the difficulties and restrictions of runrig. The remarkable number of small tenants and cottars in this region, must however be observed. Indeed such an example as Inverqueech[2] affords, of a farm on which half the infield land was possessed by about a dozen cottars and which lay runrig with two small holdings of seven and fourteen acres, suggests that density of population was the most vital factor underlying the agricultural economy.

1. See Appendix, p. 4, 5. 13.
2. Alyth farm - 304 acres. 1772. (See Folder, 4 - Photostat and Fig. III, 22.).

S Pressure of population and fluctuations caused by varying rates of internal increment and inflow of people from the glens, would upset the balance of runrig. This hypothesis must be borne in mind throughout the remainder of this discussion, while illumination regarding human relationships will be sought from the evidence of plans and documents.

Survival and Persistence of former Equalities.

Equal division of farm land and corresponding sharing of rent was exceptional in the Howe of Angus by the middle of the eighteenth century, but there is sufficient evidence to warrant its former prevalence. It is moreover notable that in some cases old traditions were continued during the enclosing epoch. For instance, on Glamis estate in 1773, two tenants were given identical long leases for the farm of Balgownie, and were to proceed towards its enclosure on the same terms, and on payment of the same rent[1].

It is understandable that the attitude towards customs, especially when paid in poultry and yarn, should be more conservative than that towards payment of money rent. The List of Kanes and Customs payable out of the Lordship of Glamis in 1701, shows that at that time, the principal tenants of each farm commonly paid equal tribute in kind, although the smallholders paid varying customs[2]. The total

1. See Appendix - page ~~22~~ 36 Glamis Estate, and page 45 Glamis Estate Improvements.
2. See Appendix - Glamis Estate, pages ~~9~~ 18 and ~~18~~ 28.

due from a farm might remain fixed for a long period, irrespective of the number of tenants, the amount due by each tenant being adjusted to ensure equality. This was not always done, and in cases where tenants paid different multiples of the unit share, it may be inferred that inequality had succeeded original equality of land tenure. This was the case on Drumgley farm whose six tenants of the latter part of the seventeenth century had been reduced to four by 1701[1]. One tenant paid three times as much poultry and yarn, as each of the other tenants. He gave thirty-six fowls and nine spindles of yarn to the twelve fowls and three spindles contributed by each of the others.

A similar transitional stage, but in the payment of money, rent may be seen in a rental of Guthrie Estate for 1777. Four shares out of a total of ten payable for the Eastertown were each £2. 11. $1\frac{1}{3}$, but in this case the remaining shares showed nc perceptible relationship to that sum, which is obviously a conversion from Scots money.

The Guthrie Rental for 1761, in a list of fifteen possessions, affords four examples of rent being equally divided between tenants, and amongst various entries for Balnamoon Estate in 1784, there is one instance of three tenants contributing £1. 10. - each towards the rent of a farm. It is not certain however that in the eighteenth century equal allocation of rent implied equal division of

1. See Appendix - Glamis Estate, p. 13.

land, in acres or in quality, but may merely serve as an indication of conditions that had passed. The following examples from the Panmure Estate may be listed.

Rental of Panmure Estate 1764		Acreage shown on Estate Plans	Infield Acres	Outfield Acres	Total Arable
Half Lightney Farm	£4.3.4.	41 acres	12	10	22
Half Lightney Farm	£4.3.4.	44 acres	19	9	28
Half Blairno Farm	£8.6.8	77 acres	29	21	50
Half Blairno Farm	£8.6.8	189 acres	19	31	50

The Kinnordy Rentals alone mention actual division of farm land into fractions. Mention is made of the divisions of certain farms in Glenisla in 1797. The farms of Easter and Wester Inverharity were divided into eighth parts and fractions or multiples of that unit. Seven tenants possessed forty-eight acres of Wester Inverharity, and three tenants the forty-eight acres of Easter Inverharity. Easter and Wester Dalnacapoth Farms, also mentioned, totalled twenty-four acres, divided unequally into sixteen and eight acre possessions presumably with the same fractional division in mind.

S It is understandable that inequalities should appear where such small farms were divided amongst a number of tenants, but in the case of the larger farms of the Howe especially, the multiplication of original shares of rent surely indicates

class differentiation, and a certain degree of fixation of runrig. Where individual possessions on a shared farm increased in size, either the number of tenants must have diminished, or other possessions must have become correspondingly smaller. It seems proper at this point to consider the character and amount of land available for colonisation.

Changes in the Extent of Farmland.

It was fortunate that the nature of the terrain in the Howe of Angus and all but the lowest coastal lowlands, gave the constantly recurring tendency for moor, moss or bog, to alternate with stretches of cultivated land, and for that land to be more frequently at the worst stony and sterile, rather than marshy. Here was the welcome outlet for surplus tenantry to establish holdings that varied from smallholdings to ambitious newtowns. The large farms of Newton of Airlie and Newtown of Glamis, which were well established at the beginning of the eighteenth century, show that at the time of their formation considerable stretches of moorland remained unclaimed. (See Folder - 7, Photostat).

When considering intakes of land it must be borne in mind that a considerable proportion of moorland was essential to runrig economy in this region, for pasture land and for fuel, so that commonly new possessions were found at the farthest extremity of common outfields or moors. Examples of this may be seen on the photostats of Clunie, Balbegno, and Farms in

Alyth Parish. (See Folder, 8, 5 and 4 - Photostats). It is of interest to note that the 1770 plan of the Barony of Cluny showed fifty-one acres of "Comon Outfields", presumably of the farm of Corn Craigie, the farthest extremity of which, by 1789, had become a "New Possession." Some of this land was unfit for cultivation and was destined to return to moorland before being converted to modern woodland or pasture land. The plan of Balbegno Estate has references to land that had reverted to moorland by 1771, and on the plan showing Shanzie Farm (Alyth Parish), the comment "Should not be kept under culture" was written over a small moorland possession. On the other hand, moorland intakes might prosper and bring about strange anomalies. Thus near Friockheim in 1766, the Mains Farm comprised fifty-three acres, while three cottars cultivating strips in the moorland nearby, possessed a total of sixty-eight acres. (See Fig. III, 7 See p 8.).

Evidence of fluctuation may readily be seen along the hillfoot zone of the north, in the parishes of Edzell, Lethnot and Navar. At the end of the eighteenth century the parish minister of Edzell observed that though great progress was being made towards improvement of waste land, that the improvers had not yet gone so far as their forefathers. Many tracts of land on the hillsides which had been cultivated had reverted to heathland, and farms mentioned during the previous century no longer existed, the adjoining farms not having received any proportional increase[1]. The Statistical Account for Lethnot

1. Old Statistical Account, Vol. X, p. 106.

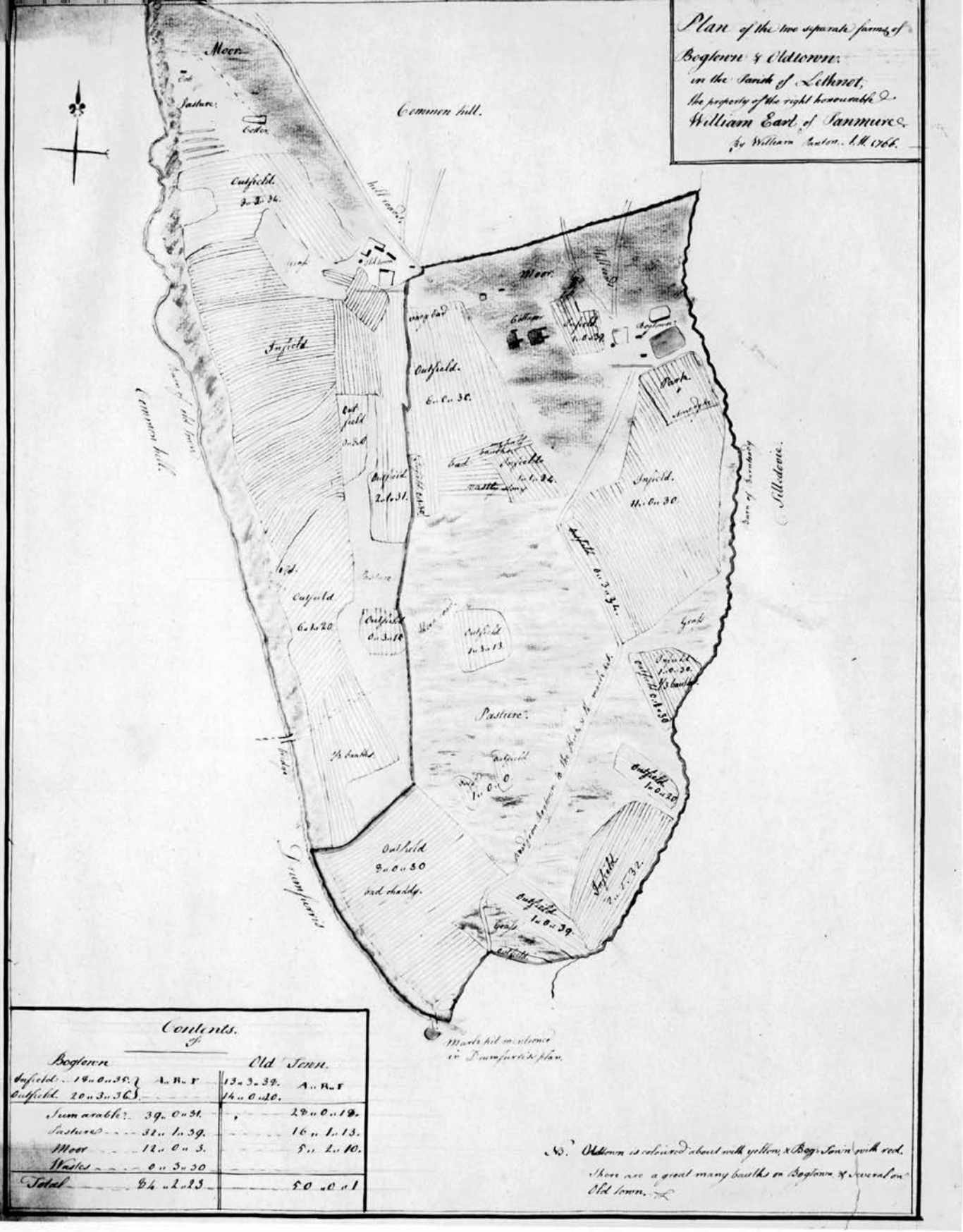


Fig. III. 23. Bogtown and Oldtown Farms, Lethnot Parish, Angus.

Principal settlements within the moorland edge.

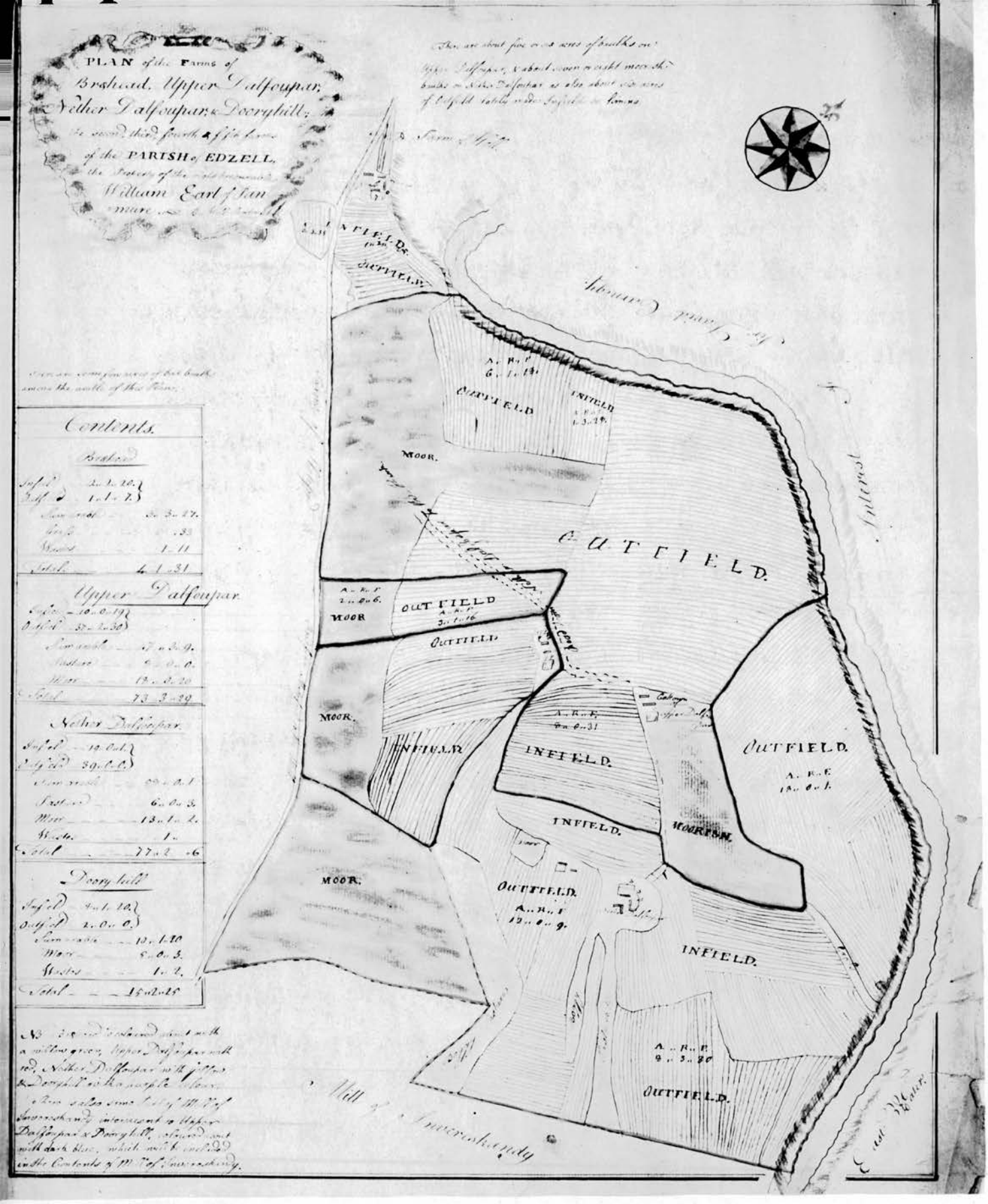


Fig. III.24. Farms in Edzell Parish, Angus.

Recent division. Upper Dalsoupar a cot-town settlement.

Section of Invereskandy lying rundale.

mentions the conversion of erstwhile arable land on the upper slopes, to pasture for cattle and sheep, during the second half of the eighteenth century[1], and no doubt since livestock played a prominent part in the economy of the strip farms along this zone, there had been frequent oscillations of the head dyke to suit changing conditions of pasture and stock. On a few of these hillfoot farms, such as Sheerstripes, Old Town and Bogtown (See Fig. III, 23.) where the principal settlement was to be found within the upper moorland edge, it seems reasonable to suppose either establishment by a group of cottars who at some time had sought the moorland edge, or the lowering of the moorland line.

On the same Panmure Estate, fairly recent colonisation may be detected in the occurrence of the narrow strip farm of Burnroot whose fermtoun is referred to on the plan as a cot-town (See Fig. III, 8p9 , also Fig. III 24) but the actual process may be seen taking place on Glamis Estate about 1770. A receipt dated "Glammis 19 May 1770" concerns payment of money to six cottars on Lindertis Farm, who were also, in three pairs, subtenants on the three adjacent possessions of Gallowhill, Genty and Muirhouses[2]. These possessions were not mentioned in the 1701 list of Customs, and moreover the estate plan of Newtown of Airly, dated 1771, shows a corner of the farm cut off by a straight line and labelled "Moor laid in to the Tacks of Moor Houses (See Folder, 7 - Photostat)

1. Old Statistical Account, Vol. 4, p. 11.
2. See Appendix - Glamis Estate, page 3.9.

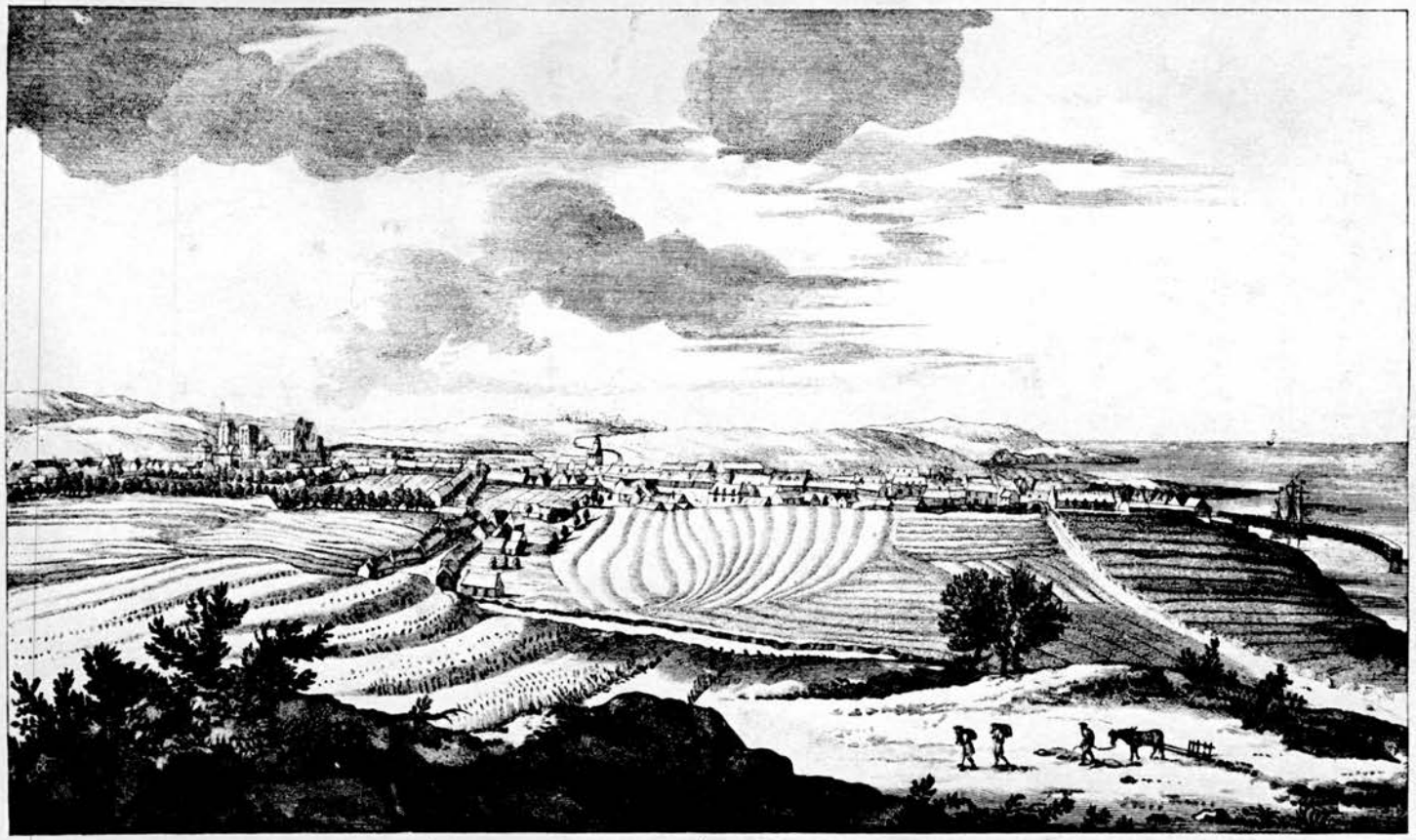


Fig. III.25. From the original view by Slezer, c. 1694.

Lindertis Farm is adjacent to Newtown of Airly, and the moor lay on the slopes of a ridge above the two fermtouns.

The photostat of the Farm of Auchindory affords an excellent study of phases of expansion of a fermtoun and its cultivated acres, by encroachment onto the moorland of the farm (See Folder 9 - Photostat). It also provides the most detailed and satisfactory example available, of runrig in this region in its most faithful and characteristic form. For both these reasons, it is worthy of detailed study.

Evolution of Runrig as shown by Estate Plans.

The plan of Auchindory Farm shows every rig, and has a complete table of acreages. It may be well, therefore, to pause for some consideration of this unit of runrig.

Wight in his survey of this region referred occasionally to the high crooked ridges and broad baulks of the old order of things, and the parish minister of Clunie recalled the farmer's "crooked ridges everywhere warped through the crooked ridges of his neighbour[1]". (See Fig. III, 25). Some of the Auchindory rigs were remarkably straight, but the tendency to assume the familiar elongated S pattern can be seen, more developed in some cases than others. At the western extremity of the farm, one unfortunate tenant had his ridge cut in two by the bulging ridge of his neighbour.

1. Old Statistical Account. Vol. 9, p. 225.

Auchindory was a strip farm lying on a slope. It extended from moorland that reached the height of four hundred and fifty feet to mire that lay slightly over two hundred feet, and the rigs followed the direction of slope. Although rigs normally did follow the direction of slope, occasionally they might be seen following contour lines. (See Folder 4 - Photostat). The head rig on which the plough turned, naturally lay at right angles to the rigs which it served, and sometimes it might be extended into a row of rigs such as "The meickle head Rigs" of Balbegno Estate Plan (See Folder 5 - Photostat). This development may be seen on the photostat of Farms in Alyth Parish (See Folder, 4) and on Auchindory there was a head rig on the southern boundary, as well as a short one near the principal settlement.

Roger in his Account of Angus[1], in the course of a discussion about shearing, mentioned the length of rigs as being nine hundred or a thousand feet, and their breadth sixteen to eighteen feet. - Such a rig would be one and a half times the size of the old standard rig of a rood, or quarter of an acre, but it may be that ridges were lengthened to suit new conditions when they were straightened. Certainly the rood appears in field nomenclature, and evidence points to its having been accepted as a standard unit. On the Alyth Farms photostat we may see "Cotterland and Rood-ridges" near a settlement of Cottars, and rood fields or strips are mentioned elsewhere.

1. Roger. General View of the Agriculture of Angus or Forfar. Board of Agriculture, Edin. 1794, p. 19.

The photostat of Farms in Alyth Parish shows two fields where the ridges are approximately one and a quarter roods each, namely "Nine Ridges" containing 2 acres 2 roods 37 falls, and "Six Rigs" comprising 1 acre 3 roods 17 falls. The plan of Auchindory however, shows manifestly the inconsistency in the size of rigs that was prevalent by the mid-eighteenth century.

The principal tenant of Auchindory in 1773, had possessions that ranged in size from a strip of seven acres to a section of a small ridge that amounted to .02650 of an acre. Although there was no uniformity in the size of strip possessions, there was however, a semblance of it within sections of the farm. Thus the seven narrow central strips shared by Alexander, Spence and David Spalding, were each roughly .75 of an acre, while in the outfield known as "Denshade" were to be found neighbouring strips of similar size, that varied from .3 to .5 of an acre. It is apparent from observations of the plan and the first items in the Table of Contents, that considerable amalgamation of rigs, both longitudinally and laterally, had taken place, and it would seem that when lengthwise combination of ridges took place, there was some endeavour to maintain equality of acreage. Although it is impossible to deduce with any certainty, the size of the original rigs, it is interesting to note that a number of the smaller rigs of both infield and outfield amount roughly to quarter of an acre - that is, a rood - or to half that amount.

Where rigs abutted on moorland their rounded ends may sometimes be seen (for example, see photostats of Balbegno and Farms in Alyth, Folder 5 and 4), but where arable fields were contiguous, head rigs might provide turning space. In cases where the rigs were truncated to conform to a straight line, presumably the plough team turned within the strip itself. It may be noted that although the rigs of three tenants (David Spalding, Alexander Spence and James Spence) terminated on the small head rig shown, the head rig was shared by only two of the tenants, presumably for growing purposes.

The proportion of land occupied by baulks is seldom given, but there are two references to that on the photostat of Farms in Alyth Parish (Folder, 4). Cult Bank, a section of infield of Inverqueech, comprised 5 acres 1 rood, 6 falls, of which, 25 falls was baulk, and Barnshade, also infield of the same farm had 25 falls of baulk within 8 acres 2 roods 24 falls.

S Thus we see the influence of the old rood ridges permeating the lay-out of eighteenth century rigs, in their divisions of that unit, and much more commonly, multiples of it, in conformity with the development of large possessions, and inequality of tenure and class. Surely it is not entirely coincidental on Auchindory that a block of rigs, each roughly three roods in size should be beside two blocks placed end to end, whose rigs tend to be about two roods or half an acre in

size. The longitudinal union of rigs was the most probable initial step towards enlargement, and although different series of rigs were of different sizes, some effort was made within each collection to preserve equality. It was the lateral amalgamation of rigs which came later, that caused inequalities. Certainly the fields or shades as they were often called, were of all shapes and sizes, from the yards or tofts to the wedge-shaped butts, the infields or crofts and the larger outfields which were sometimes called faulds or leys.

The plan of Auchindory, in spite of some degree of integration, exhibits the most pronounced fragmentation of holdings, seen on an estate plan of this region. Of its two hundred and twenty-one acres, a hundred and thirty-six were possessed and cultivated by eight tenants, in a total of a hundred and fifty-four parcels. Three of the tenants possessed each a share that approximated to a husbandland, while each of the remaining tenants had rather less than an oxgate. The principal tenants possessed a greater number of strips than they did acres, Alexander Spence, for instance, having twenty-eight acres in forty-six pieces. Four of the lesser tenants rather significantly, had a greater proportion of their rigs laid together, the tenant who lived by himself close to the Coupar Road, indeed, having one compact holding. Although, in the allocation of infield strips some regard was had to the desirability of siting them near the tenants' respective

steadings, the outfield possessions were quite intermixed. The impression is thus obtained, that, although they did not live in a compact fermtoun that at least seven of the tenants were co-tenants, the inequalities of tenure having been caused by the splitting of two of the four husbandlands that would constitute the original ploughgate.

The first phase of expansion was probably the shift westwards of two of the tenants from the original fermtoun, still inhabited by Alexander Spence and John Wilkie, to convert the old outfield marked on the plan, to infield, which they were to share. Here the strips were fairly broad, but more compact yet, were the holdings of the next group of colonists, the group of three of the smaller tenants whose houses were on the moorland edge beside the road to Kirriemuir. Andrew Low, the tenant whose house stood alone beside the Coupar Road, may have been an incomer to the fermtoun. It may be observed that although extension of the arable land had taken place, there still remained in 1773 more than half as much moorland and mire, as there was arable land.

Although the cultivated land of Auchindory lay piecemeal, the farm was a distinct unit, as also were the neighbouring farms of Lindertis, Reedie, and Newtown of Airlie (See Fig. III 19. p12). Such simplicity of farm structure was frequently found, but had by no means been universally achieved in the Howe of Angus by the middle of the eighteenth century. Before proceeding to examine more complicated structures, an example of a

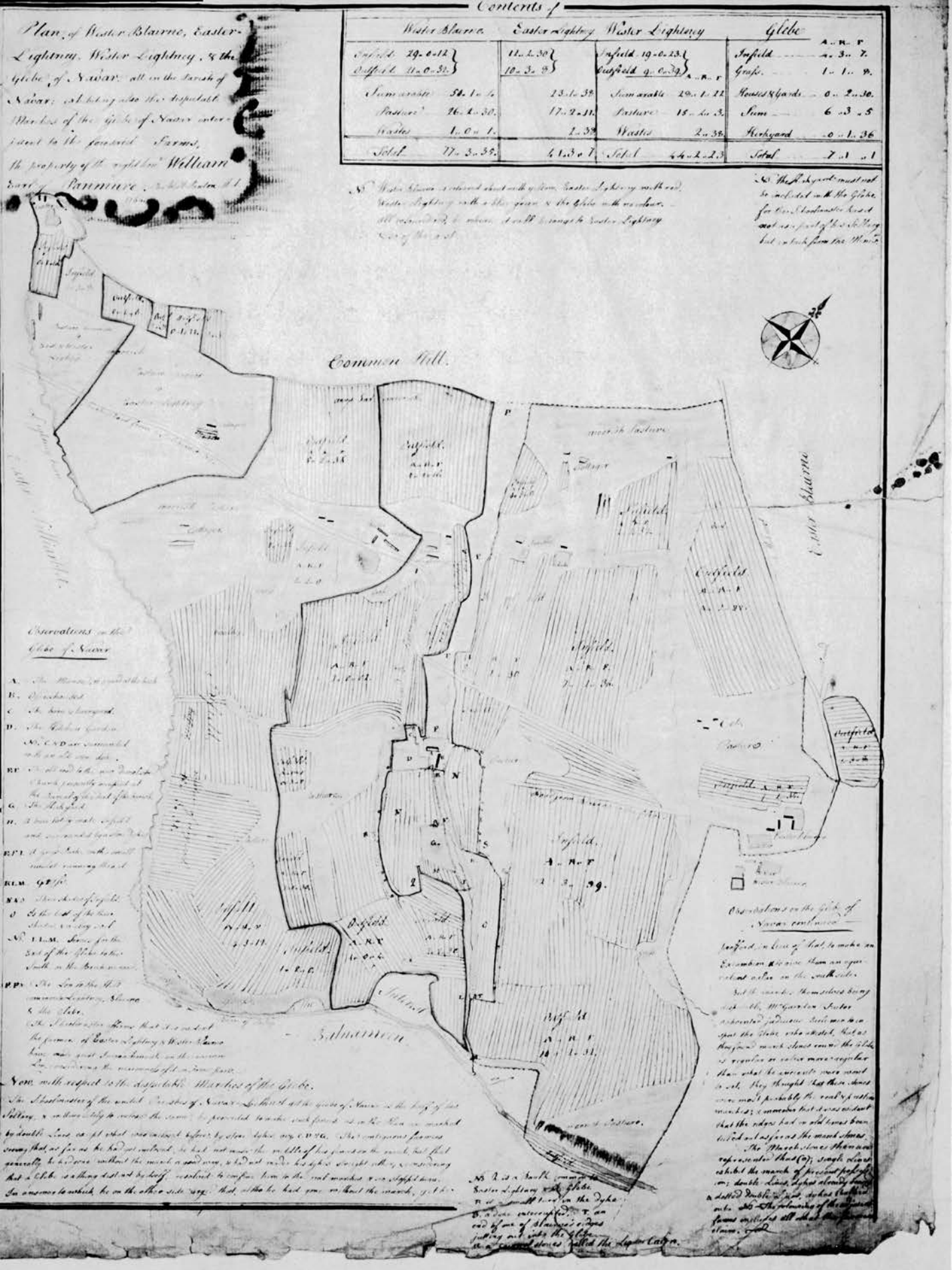
more complex unit farm may be mentioned. The farm of Shanzie shown on the photostat (Folder, 4) headed "Farms of Inverqueech, Shanzie, Cult and Blackbridges....in the Parish of Alyth" was a distinct unit, but the adjacent farm of Inverqueech contained within its boundary two small "farms", one fourteen and the other seven acres, that lay runridge or rundale with it. One of these, Cult, was possessed by a blacksmith and was practically self-contained, while the other and smaller possession lay close to the cot-town, near the moor on which it had a "commonty". It may be that this possession and the cot-acres belonged to a phase of extension of the cultivated farmland, for on this farm moorland occupied merely fifty-two acres of a total of three hundred and four.

The other two plans of the Airlie collection, for which there are photostats illustrate well stages of disentanglement from patterns of some complexity. When, originally, estates and farms, as well as individual possessions lay interjected, it is hard to conceive that anything but bewildering confusion emerged. The two plans are for estates lying at the eastern and western extremes of the section of Strathmore under consideration, one being the plan of the Barony of Cluny (contemporary spelling) in Perthshire, and the other the plan of Balbegno Estate in Kincardineshire (Folder 8 and 5, and Figs.III, 12 and 14). Balbegno plan and even better, the plan of Hallyburton Estate (Folder, 2) show a small degree of rundale of estates, while both the Clunie and Balbegno plans show rundale of farms.

A plan of Clunie, dated 1770, for which there is no photostat, shows a considerable amount of rundale of farms, which by the time of the later plan of 1789 was no longer evident. The later plan however shows a transitional stage, because this region was late in being improved. In the case of both Clunie and Balbegno, which was also in a transitional stage, the most unified farms were to be found on the outskirts of the estates. As previously stated, some of this development may have been due to colonisation of farthest outfields and fringes, and this we can see in operation on the Clunie plan (See page III.18). The farms of Mickle Strath (76 acres) and Bent (24 acres) which lay in the south-eastern corner of Balbegno Estate have the appearance of newly-developed farms. They were situated on level ground which in 1771 was in process of reclamation, and both farm buildings and fields have a fairly regular appearance, with nothing to suggest runrig occupation. They contrast with the two other fringing farms of Thornyhill (90 acres) and Cold Cotts (171 acres), which were obviously of longer standing. Thornyhill has an evident fermtoun, and lies interjected with alien possessions, while Cold Cotts gives the impression of backwardness and neglect. It is interesting to note that on Stracathro Estate in 1792, the farm of Ardo, which was the farm most remote from the mansion, and was more than three times as large as any other farm, was quite unenclosed, when the rest of the estate had been divided into enclosures. (See Folder, 10 - photostat).

S Thus by the mid-eighteenth century a situation had emerged whereby on the fringes of considerable estates, one might discern large unit farms in a backward condition, which perhaps never suffered as much interjection of land as the more central parts of the estate, and small unified farms under a hundred acres, often under twenty, some of which might represent recent colonisation. (See Fig. III, 13, 14, 7 and 15). Folder 3. (See pages 8 and 10)

In this region the lands near the mansion house and mains farm were usually more densely peopled than the outskirts of the estate, and the farm pattern hence was more complicated. In 1789 part of the Mains Farm of Clunie, (Folder 8), lay rundale with the Kirkton acres, and also with rigs pertaining to Craigy Wallace, a possession of some thirty acres. Concraigie a central farm of 127 acres, lay more compactly than the Mains, its rigs combined to form blocks which were possessed in unequal shares by five tenants. On Balbegno Estate (Folder, 5) which by 1771 had a core of regular enclosures surrounding the mansion, the process whereby simplification of tenure was achieved is not clear. The Mains Farm of a hundred and eighty-two acres was tenanted by one principal tenant and lay quite compactly in large fields, yet the low-lying section of it, which contained some "New Lands" lay interjected with blocks of rigs comprising the thirty-five acres of the farm of Lone, which may at one time have been a lone venture on the marshy ground. Two other fields are said to be runridged, which gives the impression that the rest of


Plan of Wester Blairne, Easter-Lightney, Wester Lightney, & the Glebe of Navar all in the Parish of Navar: Shewing also the disputable Marches of the Glebe of Navar intended to be feuded Farms, the property of the right hon.ble Williams Earl of Panmure
Contents of
Wester Blairne
Easter Lightney
Wester Lightney
Glebe
Common Hill.
East Blairne
Observations on the Glebe of Navar
Observations on the Glebe of Navar continued
Fig. III.26. Rundale of East Lightney Farm with West Lightney, Navar, Angus.

the Mains was not.

It is remarkable that there should be no clustered settlement near the mansion of Balbegno, and it may be that a fermtoun had to give way to the new enclosures or the extension of the Mains Farm. Corroborative evidence of the existence of a community at some period, is to be found in the intermingling of the possessions of the eight tenants, whose smallholdings lie along the strip close to the old and new roads leading from Thornyhill past the policies. It appears as though there may have been a fermtoun in the triangular section of small rigs lying between the old road and the enclosure called West Park, before the tenants scattered along the two roadsides to establish individual smallholdings, while still retaining their shares of the original runrig strips. David Wairden of Windy Shore with a total of thirty-four acres, had the lion's share as most of the other tenants possessed less than ten acres, and Alexander Duff of Toad's Nest had only three. The smaller tenants no doubt were weavers. Vestiges of farm rundale remained in so far as David Wairden possessed two rigs that lay interjected with Thornyhill, and some of the rigs possessed by John Paterson of Barnie lay with those of the eight tenants, though not actually intermixed. Barnie, which in 1771 comprised a mere eight acres and two cot-dwellings, gave its name to the moor of the estate, and may have been a victim of a Mains extension policy. Certainly the "Inclosures" as listed in the Table of Contents, included the entire Moor and Moss of the estate, and no doubt it was

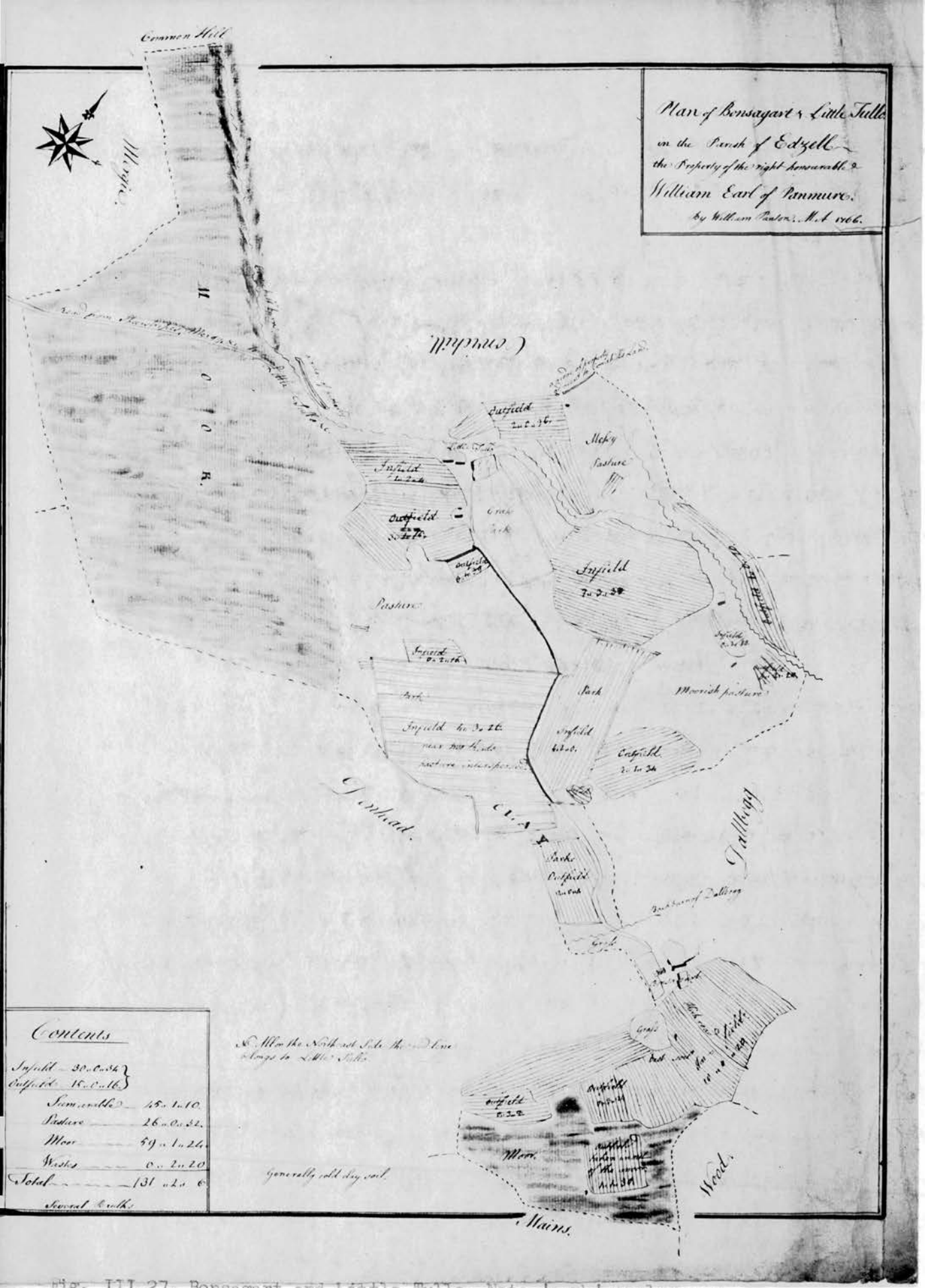


Fig. III.27. Bonsagart and Little Tullo. Note 'park' enclosures.

merely a matter of time until some of the smallholdings vanished. (See Fig. III, 12 , page 10 and compare with Ordnance Survey Sheet).

Active runrig and piecemeal allocation lingered longest where there were numbers of smallholders living in villages. We see this on the Clunie plan (Folder 8) where the Kirkton acres confuse the lay-out near the village, and on the Hallyburton Estate plan in 1784 (Folder 2), where the unplanned runrig lands of Kettins are conspicuous amongst the regularly enclosed lands of that estate. The environs of Glamis must have presented a similar appearance in the early part of the century, and Slateford (Edzell) was parcelled unequally, perhaps in fixed runrig, amongst sixteen tenants in 1764, when most of the farms of the estate were single tenancies.

The estate plans of Glamis and Panmure (see Folder 3, 6,7,11 and Figs. III19,12 and 28.29-30) present remarkably straightforward farm patterns, although there are signs that some of the Panmure farms were emerging from a state of rundale. (For example, see Fig. III,24,19 Interjection of mill lands with the farms). The farms of East and West Lightney had some possessions intermixed (See Fig. III, 26) and the strip farms of Sandyhillock, Strowan and Burnroot (See Figs. III,8.9-10,9) still had patches of sandy or moorish ground lying rundale, while a few farms were bracketed together as though they had but recently been differentiated. (See Fig. III, 27). The Glamis plans, in common with some of the other plans such as those of Pitscandly and Hallyburton Estates, seldom indicate rigs.

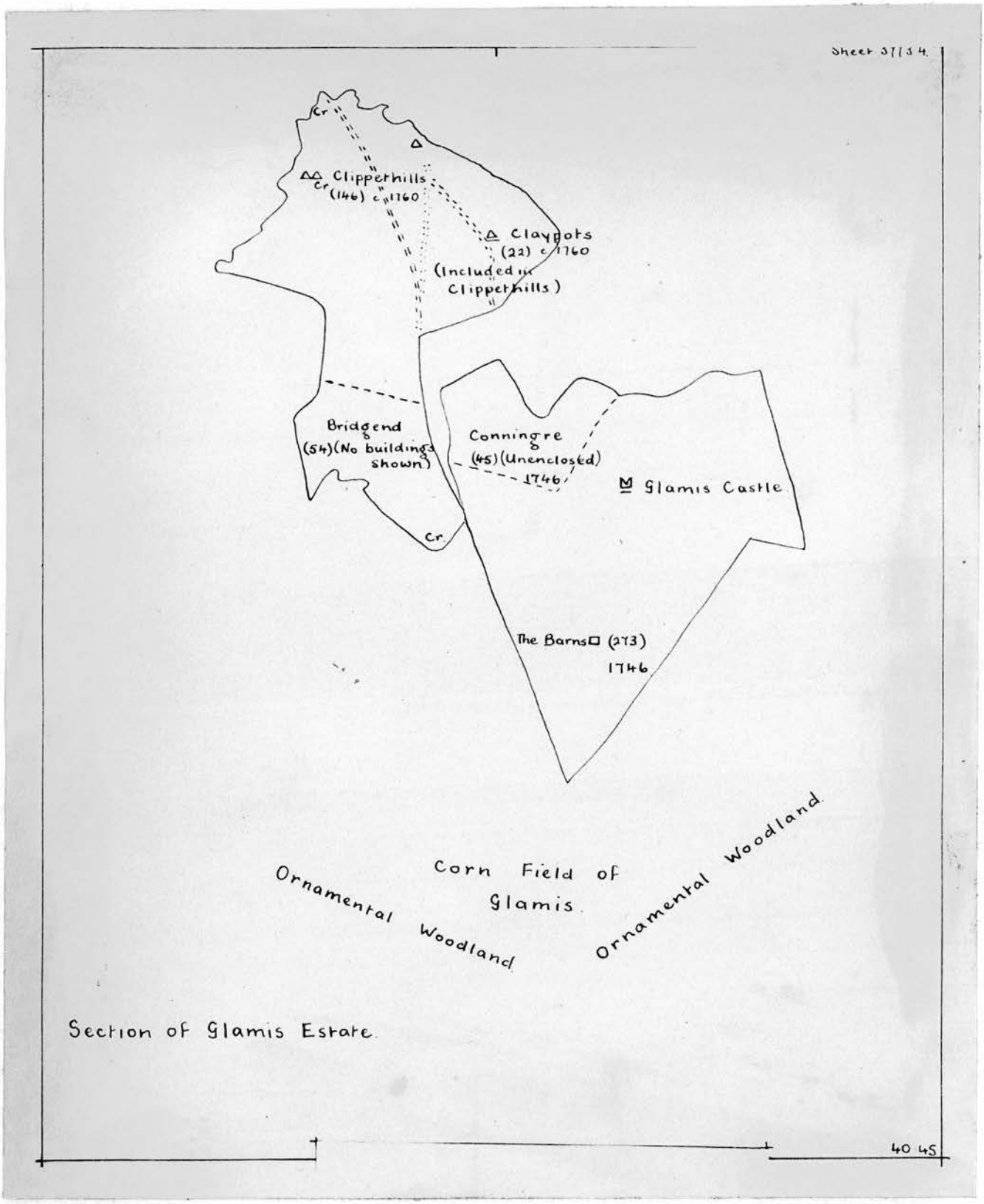


Fig. III.28. Indication of Glamis Policies and Mains, Clippethills and Bridgend.

Conningre a rabbit warren.

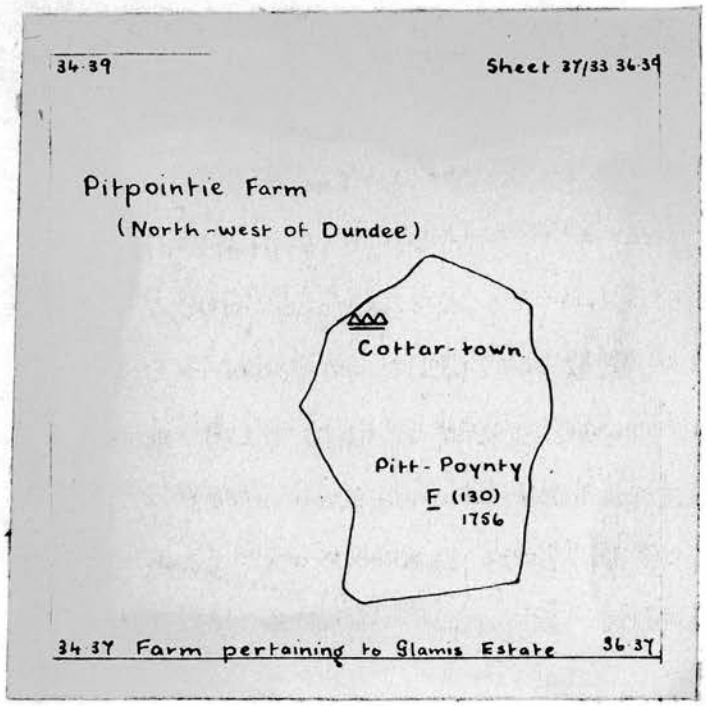


Fig. III29. Pitpointie Farm, Auchterhouse Parish, Angus.

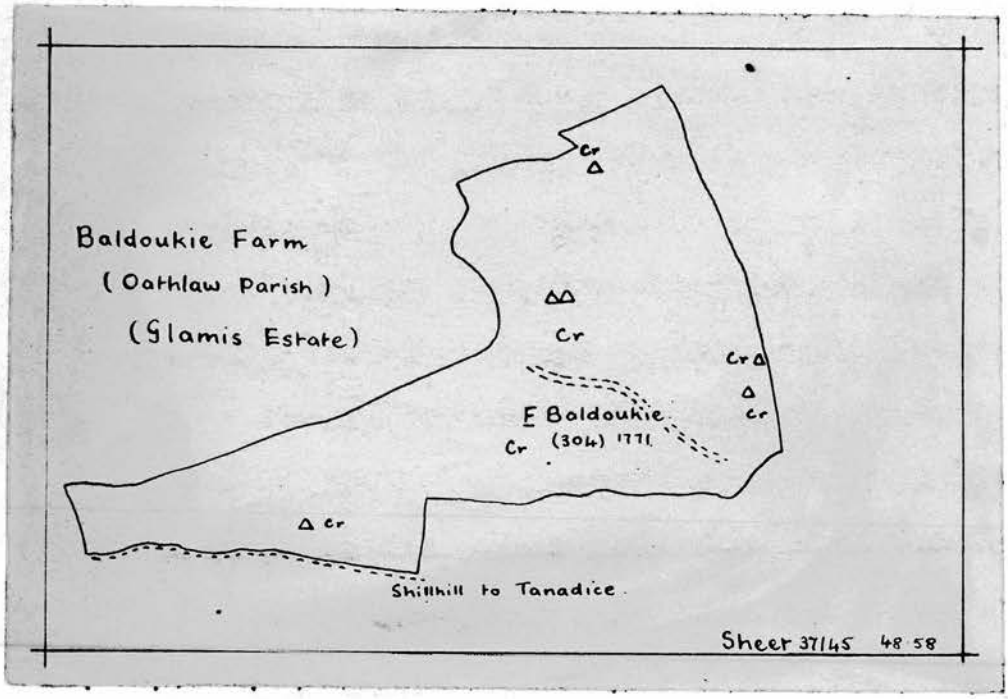


Fig. III.30. Baldoukie Farm, Oathlaw Parish, (Glamis Estate)

Six cottages have disappeared, two between the principal farms, and three on the moorland edge by Knowehead.

This is understandable in the case of a large farm such as Reedie which at the time of the plan was shared in a simple fashion by two tenants, but in the case of the smaller and more backward farm of Clippethills (Folder ~~II~~,"Photostat) which in 1773 had six tenants, one must infer either that runrig was fixed and tenure simplified, that leases were from year to year and control autocratic or that another and more detailed plan was subsequently drawn. The plan of Pitt-Pointy drawn in 1759 (see Folder - 6) shows some fields divided into rigs and others not, giving the impression that at that time groups of rigs were being integrated to form regular fields[1].

S Certain broad deductions may be made from this survey of stages in the evolution of runrig as shown by the estate plans. Underlying the various stages shown, in the general movement towards simplification of a complex pattern of rundale and runrig, we may discern certain general principles operating, modifications being introduced by local causes in individual districts or parts of an estate. The example of Auchindory illustrates well how the old instinct of equal division might continue to function even when unequal shares were developing. Thus rigs which were combined lengthwise into convenient bundles of two, three or more rood lengths, might still have been equally shared, and doubtless often were, but it is easy to see how inequalities ensued. Lateral amalgamation of possessions and fixation of runrig for convenience, as found

1. Appendix, Glamis Estate, p. ~~12~~ 22.

S contd. on Auchindory, accentuated differences. Although inequalities existed on Auchindory, apparently there was some approximation to allocation of multiples of unit shares, similar to that multiplication of unit shares of rent that has been previously mentioned, and co-tenancy continued to exist. Similarly the tenants of Concraigie in the Barony of Clunie who shared unequally, parcels of rigs, presumably continued in the spirit of good neighbourhood, which according to the parish minister, prevailed generally in the parish. A further advance towards unification of holdings and a compromise with runrig may be seen in the establishment by the eight tenants of Balbegno, of individual holdings, while continuing to share, albeit unequally, old runrig strips.

S In fertile districts and on the fringes of estates there was a tendency for unit farms to develop. Some of the older-established farms near estate boundaries may have been formed later than the more centrally placed farms of the estate, and have thereby escaped excessive rundale of possessions, while smaller fringing units were almost certainly of relatively recent establishment. Before the impact of the Agricultural Revolution, 'mains' farms were increasing in size and achieving a more simplified pattern, although sometimes hampered by the interjected acres of smallholders. By the middle of the eighteenth century, active runrig seems to have been confined mainly to the smallholders and acremen in their clustered settlements.

S The inadvisability of generalising too much may be

illustrated by the juxtaposition of Reedie Farm in Glamis estate, which was possessed in almost distinct portions by two principal tenants, and Auchindory Farm in Airlie Estate, where eight tenants on a smaller area cultivated a hundred and fifty-four intermingled parcels. The human factor must be taken into account.

A matter worthy of investigation is, whether during the gradual advance towards establishment of independent holdings, the ploughgate persisted as a significant factor, so that we might for instance find farms that were multiples of the usual ploughgate, as we have found multiplication of individual shares. If it were possible to ascertain the average size of a ploughgate in this region, some light might be thrown on the relationship between this and pressure of population, from the time of an earlier era of pure runrig.

The Size and Significance of the Ploughgate in this Region.

A ploughgate has been defined as the amount of cultivable land pertaining to a one-plough holding, that is "where pleuch and scythe may gang[1]". Whether or not this hypothesis is correct, the considerable proportion of moorland commonly found on farms of this region must be remembered, when farm acreages are considered. Of the 642 acres of Mains of Edzell, 400 or two-thirds of the whole, was moorland. Although pasture

1. A. McKerral. Ancient Denominations of Agricultural Land in Scotland. Reprint from Proceedings of the Society of Antiquaries of Scotland, Vol. 78 (Vol. 6 of the Seventh Series), 1943-44, page 49.

Farm Acreages shown on Estate Plans.

Where the fermtouns are in sections, the acreages are placed side by side, and totalled.

Panmure Estate

149 37 (186)
44 41 (85)
77 189 (266)
45
55
33
50
84
3 259
107
2 174
4 326
70
82
131
128
120
89
2 176
4 292
8 642
104
73 77 (150)
4
200
88
105
62
200
3 255
(332)

Balbegno Estate

182
2 171
280
90
35
34
76
24
8
16
5
5
8
8
(14) Runridged
3
4

Stracathro Estate

101 67 (168)
76
(97)
123
125
135
5 423
10
9
35
37
15
22

Balnamoon Estate

303

Lour Estate

3 267
3 259
3 242
12
10
45
2 158 5 Farms
87 8 Farms
(78)
(58)

Airlie Estates

3 221
4 304
7
14
4 277
85
50
11
7
10
33
66
26
18
127
51
8
50
69 + 17
8
11

Gardyne Estate

272
66
20
30
200
62

Glamis Estate

4 304 (Contd).
4 316 273
22 130
124
54
45

Middleton Estate

3 258
126
20
53
33
31
4
99

Kinnaird Estate

Fullerton Farm 310

Pitscandly Estate

2 140
125 101 (126)
113
28
8
40

Invercarity Lands (Kinnordy)

200
3 248
33
63
81
31
80
7
28
85
41
3
49
211

Numbers of Possessions in various categories

Less than 100 acres	-	99
100 - 199 acres	-	24
200 - 299 "	-	18
over 300 acres	-	8
		149

Numbers associated with a ploughgate of 70-85 acres underlined in red.
Numbers of ploughgates indicated in red.

Fig. III.31.

land, especially in the hillfoot regions, and "feal and divot" land were essential to the farm economy, it is doubtful whether all of this great stretch of moor served any useful purpose. The proportion of moorland and pasture to arable land, varied from farm to farm, as also did the proportion of infield to outfield.

It may be supposed that where population was increasing, that cultivated land, and in effect, the ploughgate would in - crease in size until capacity was reached, and runrig became unmanageable, when splitting of units would ensue. The list of farm acreages shown on the opposite page (Fig. III,31.) certainly indicates a preponderance of small farms in the Howe of Angus in the eighteenth century. Of the hundred and forty-nine farms listed, ninety-nine or roughly two-thirds were less than a hundred acres in size, while there were more farms of over two hundred acres than there were between a hundred and two hundred acres. It may be observed that farms approximating to the old standard ploughgate of a hundred and four acres are not conspicuous, whereas figures between seventy and ninety and multiples or fractions thereof are frequent. The frequency with which farms of eighty to eighty-five acres, half that acreage, or multiples of it, occur, would seem to warrant the assumption that a ploughgate approximated to that size. It is known that some of the larger farms of Glamis Estate might have a number of ploughs, in one case as many as six , so that it is probable that they were recognised

1. Appendix Glamis Estate, p. 5.13.

multiple ploughgates.

The evidence of contemporary writers adds weight to the supposition that in this region, if the more fertile grain-producing districts be excepted, a farm of some eighty acres was generally regarded as moderate in size. In the parish accounts of the Old Statistical Account, farms of a hundred and fifty acres were frequently classified as large. The minister of Kirkden Parish gives some insight into the position in his parish at the end of the eighteenth century[1]. Forty-four horse-drawn ploughs worked three thousand arable acres, or an average of sixty-eight acres to each plough. Twelve people farmed holdings ranging from thirty to a hundred and fifty acres, while the rest of the parish was divided into "small portions" from thirty-six down to six acres. The writer speaks scathingly of the management of a farm as large as two hundred acres. He says that a tenant with two ploughs and eight strong horses is supposed to be able to manage a farm of two hundred acres to great perfection. "It is true," he says, "there are often but two horses in the plough, and he stirs his barley ground sometimes, with one horse only, while the other horses are doing other parts of the farm work." (Farms of that size did exist in the parish, although not mentioned by the minister). He speaks equally unfavourably of the plough teams of some of the smallholders - "Several of those who rent about twelve or fifteen acres of land keep only

1. Old Statistical Account, Vol. II, p. 509-512.

one horse, and joining with another in the same state, with these two and commonly but indifferent horses, they cultivate both farms."

That a ploughgate had commonly been reduced to ridiculously small dimensions, may be deduced from the large number of ploughs recorded for some parishes in the Old Statistical Account[1]. Thus a hundred and eleven ploughs were attributed to Blairgowrie parish[2]. The explanation given for the large number of ploughs and horses was that numbers of small possessions were let to tradespeople, who might possess a plough and two horses for a holding of not more than twelve acres. Similarly of Lethnot Parish it was said that twenty-eight ploughs were enough and more than enough for the parish[3]. The writer states that on a small farm of eighteen or twenty acres, one plough of four small horses was more than enough. This unusual state of affairs seems all the more incomprehensible when it is known that a large plough team was commonly employed with the old Scots plough throughout Angus.

1. Aberlemno Vol. 4, p.48 & 50.	30 great farmers	- 48 ploughs.
Menmuir Vol. 5, p. 146	36 farmers	- 55 ploughs.
St. Vigeans Vol. 12, p.168 & 178	70 farmers	-132 ploughs.
Kinnettles Vol. 9, p. 200 & 202	18 farmers	31 ploughs.
Logie & Pert. Vol.9, p. 45		55 ploughs.
	- average 64 acres each, (arable)	
Auchterhouse, Vol. 14, p. 516	12 farmers	40 ploughs.

2. Old Statistical Account, Vol. 17, p. 197 and 205.
3. Old Statistical Account, Vol. 4, p. 11.

At the end of the eighteenth century four horses were frequently employed with the improved version of the Scots plough, even near Dundee and in fertile parts of the Howe of Angus, while in low-lying Barry parish four horses were yoked to Small's plough. In Clunie parish where soils tended to be heavier than those developed purely on sandstone, the parish minister stated that each plough at an average turned twenty-seven acres, and that about 1760 it had been not uncommon to see eight or ten oxen and two horses all yoked to one plough[1]. In Edzell parish, at the same time often four horses and six cattle might be seen "tearing the miserable soils[2]". Large numbers of oxen were kept on the Mains of Glamis and of Castle Lyon (Huntly Castle) although it is not known how many were yoked together. The team required would naturally depend on the type of soil, degree of slope, the weight of the plough, and the quality of the animals, while custom no doubt played a part. Roger describing the era before the introduction of clover and sown grasses, declared that horses pastured on way-side grass, baulks and waste land, and were served with thistles for supper. Frequently both horses and cattle were so weak that they had to be lifted out in spring[3]. Yet this was a region long noted for its cattle, its soils were certainly superior to the wet tenacious clays of Clydesdale, and slopes except in the northern hillfoot region were seldom unduly steep.

1. Old Statistical Account, Vol. 9, p. 247 and 249.
2. Old Statistical Account, Vol. 10, p. 105.
3. Roger 1794. Preface, p. 4 and p. 13.

It may be that the excessively large plough teams that Wight notes, had survived from a period when large groups of tenants had worked together.

When the eighteenth century plough in the Howe of Angus commonly bore no relation to any recognisable ploughgate, and might merely indicate a tenant or a group of tenants, it is doubtful whether it or the ploughgate would have much significance. Certainly at the beginning of the eighteenth century, some account was taken of ploughs when rents were assessed[1]. "A notte of what wedders may be got of addition to the Earle of Strathmore his rentall..." gives the impression that a wedder was to be paid for every plough. A six-plough possession was to give six wedders and a three-plough possession three.

In the early nineteenth century, farms in the north-western glens of Angus were still estimated by the numbers of cattle and sheep that they were capable of maintaining, and not by acres. In the more eastern mountainous districts considerable tracts of mountain pasture were allotted to arable farms, in the fashion of the strip hillfoot farms of the Panmure Estate[2].

S It appears that in the Howe of Angus, some yardstick of measurement did control the size of farms, although by the eighteenth century the influence of the ploughgate may have been felt unconsciously. In the case of large farms, the multiplication of this unit may have accounted for the inclusion

1. Appendix Glamis Estate, p. 14 and 16.
2. Headrick, Op. cit., p. 214.

of a certain proportion of moorland, although in the case of the Panmure Estate, with a pastoral bias, the estimation of farms was doubtless influenced by the system prevailing in the glens.

S The presence of a few extremely large home farms in Angus will presently be discussed, and it may be noted that although a farm of eighty acres was accepted as an average farm, the mains farms of landlords were commonly several times that size. Farms of a few hundred acres were also found in the principal grain-growing districts such as the lands surrounding Montrose and the level lands near Coupar. In the early middle ages such large farms may have been more usual, and with them a large plough team, but it seems certain that a small ploughgate had been established a hundred or two hundred years before the eighteenth century. Miss Grant found slight indications that the cloth trade was especially active in the districts of Angus, and the Mearns, at the end of the sixteenth century, both Dundee and Montrose importing large quantities of dyestuffs[1]. It seems reasonable to suppose that the development of this industry which would favour an increasing population, partially dependent on the land, would influence the size of the ploughgate. Certainly the more recent development of smallholding weavers who might independently possess a plough and team, reduced the ploughgate to an absurdity. The account of Kirkden alone shows the plough corresponding to no accepted number of acres or tenants.

1. I.F. Grant. Social and Economic Development of Scotland before 1603, p. 319.

An appreciation of the status and general condition of the eighteenth century smallholding farmer and cottar in Angus, may well afford a valuable key to the understanding of the development of this complex region.

Status and Conditions of Tenure of the Eighteenth Century Small-holder in Angus.

Cursory examination of estate plans and contemporary documents soon reveals the impossibility of making any simple classification of this group. Here are gradations of subtenant, from "cottars" possessing a farm of some ninety acres and occupying the fermtoun, to "acremen" with little more than a house and a yard, while to confuse the issue, smallholders of diminutive possessions may be referred to as the tenants of farms. We have previously observed the farm of Burnroot with its cottown in place of fermtoun, (page 19), the three cottars of Coat-town of Friack who possessed fifteen acres more than the adjacent Mains, (page 18), and might discover in the Rental for Guthrie Estate, 1761, two cottars who shared the quite considerable cottarland of the Mains, and paid larger rents than some of the tenant farmers. In the neighbourhood of Glamis, cottars and acremen abounded, who paid small rents, and yet some of whom paid considerably more than tenants of so-called farms on the estate. In 1773 the tenant of Powmyre on Glamis Estate paid £1. 3. 3 rent, when numbers of the erstwhile acremen of Glamis were paying more than £10[1]. Other small possessions termed farms

1. Appendix Glamis Estate, p. ~~24~~ 36 and ~~18~~ 28.

include the seven acre Farm of Blackbridges in Alyth and the eight farms of Moss-side, (Lour Estate - See Fig. III, 13 p.10) which amounted in all to eighty-seven acres.

Cottars in eighteenth century Angus might therefore be people of consequence. Certainly cot-acres covered a considerable proportion of the land, and the numbers possessing them were large. Cotton of Gardyne in Middleton Estate, covered a hundred and twenty-six acres, and, in 1830, was still possessed by five or six tenants. (See Fig. III, 7 p. 8). On Glamis and Airlie estates, from five or six to a dozen cottars might be found possessing varying amounts of land up to about fifty acres. On Glamis estate in 1773, according to a Rental, a hundred and eleven of a total of two hundred and thirty-five tenants paying rent, were designated cottars. According to the Statistical Account for Glamis, at the end of the eighteenth century, besides the village of Glamis with its five hundred inhabitants, were Cottertown of Drumglye with a hundred and twenty, Cottertown of Hayston with forty-eight, and Newton of Glamis with a hundred and forty. Undoubtedly numbers of cot-towns in Angus approximated to villages, although often amorphous in lay-out and lacking the functional character of such villages as Glamis, Edzell, and Kettins. Headrick, writing in 1813, described villages that consisted of lots of five or six acres, set down on waste land. These he said provided the farmer with a reservoir of labour, and he added "The only bar to their increase is scarcity of fuel; and were

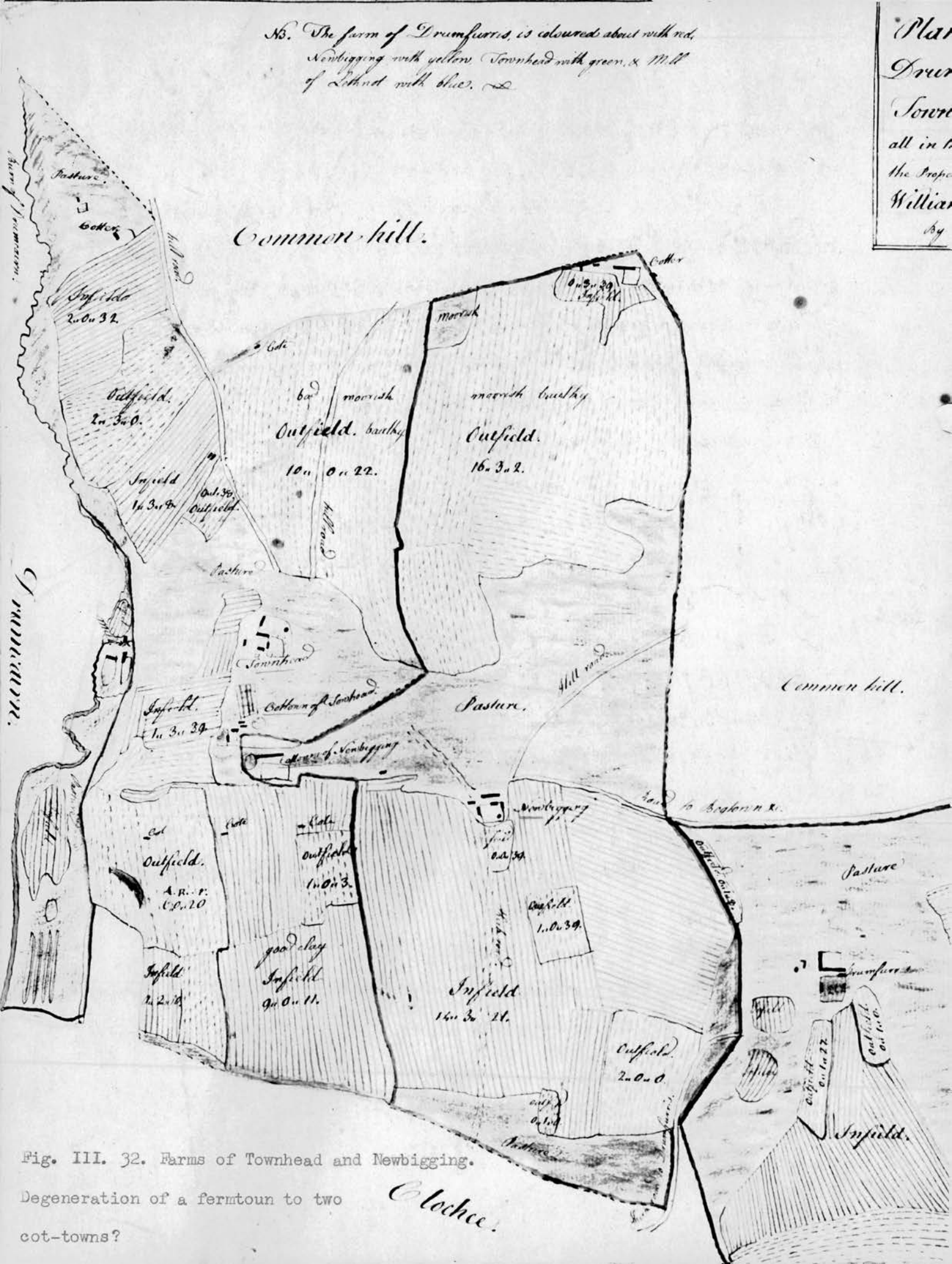


Fig. III. 32. Farms of Townhead and Newbigging.

Degeneration of a fermtoun to two cot-towns?

the county intersected by canals, a considerable proportion of it would become a continued village[1]".

It is certain that subtenants and cottars made possible the running of large farms possessed by one or two tenants in the eighteenth century, and in some cases in the seventeenth century also[2]. These cottars, albeit many were part-weavers, were no mere appendages to farms in Angus, but represented an essential and integral part of the agricultural economy. It may be suspected that they as a class were the unfortunate sufferers from the effects of an overcrowding which might perhaps be traced back to the Pictish townships which gave the prefix "bal" or "pit" to so many of the fermtouns in Angus. Clusters of settlements bearing the same name and including a cot-town, are frequent, and suggest an original large township. On Hallyburton Estate alone (Folder 2) are two clusters with the name of Balloonie and Pitcurr, beside four other settlements with 'bal' or 'pit' prefix. When we see such an example as the Parish of Lethnot affords of two large contiguous cot-towns lying in the middle of the boundary line dividing two small farms of forty-five and fifty-five acres, it is natural to wonder whether the cot-towns or the steadings, the "cottars" or the farmers came first. (See Fig. III, 32.).

The smallholders proper may be classified generally, according to the degree of their dependence on a superior. Two types

1. Headrick, 1813, p. 211 and 212.
2. The Land of the Lindsays. Andrew Jervise. Rentals of Edzell and Lethnot for 1672 and 1699 show single tenancies for most farms.

have previously been mentioned in the review of settlement sites (pages 11 and 12).

The humble cottagers were the main support of the farmer and the laird, until the era of improvements fostered an increasing dependence on day-labourers, and many Angus lairds lived to regret the day when they deprived them of their cottages. Besides a cottage and kail yard commonly situated in the cot-town, the cottar might be given some acres of land and other perquisites in exchange for his labour and the services he performed for his master. In Kirkden parish at the end of the eighteenth century, a cottager possessed a house and yard, and a cow, and was given fifty-two stones of meal, five, six or seven pounds sterling per annum, and some ground for lint[1]. The minister of Lethnot parish records that common labourers when they were married were given a small settlement from a farmer, of one and a half or two acres - a sufficient quantity for two cows and twenty-four sheep. The farmer did all the necessary work for the land, tilled, harrowed, and led fuel from the hills, while the subtenant had to serve the farmer in harvest, and in the winter half of the year[2]. Roger declared that so many servants were necessary even on small farms to ensure adequate supplies of fuel, that the farmer seldom needed to hire extra for harvest[3], and this

1. Old Statistical Account, Kirkden, Vol. 2, p. 509.
2. Old Statistical Account, Lethnot, Vol. 4, p. 16.
3. Roger, 1794, p. 20.

state of affairs was more usual than in Lethnot where the farmer led the fuel.

Cottagers were commonly referred to as servants of the farm, and obviously there was considerable mutual reliance between master and servant. Fair treatment might forge a bond ensuring faithful service for the master and security of tenure for the cottager, but where the gap between the two was considerable, and the servant no longer in any sense ate at his master's table, there might be considerable exploitation of the cottar. "My Lord's servants" of Glamis and Castle Lyon (Huntly Castle) worked very hard for their living.

Those whom the minister of Kinnettles parish described as pendicle tacksmen, depending not on farming alone[1], and who were mostly weavers, were rather more independent than the cottagers, although they provided a lucrative source of revenue for the landlord. Most of these tradesmen had small possessions of land, and they might attach themselves voluntarily to some laird or farmer, so that they might keep a horse and cow, grow some vegetables, and perhaps a little flax or corn. It would have been hard for them to exist otherwise. Thus, again in Lethnot parish, we hear of tradesmen and artisans who obtained small settlements of about two acres each from the farmers, for which they were bound to reap in harvest and give some days work in the busiest part of the summer[2].

1. Old Statistical Account, Vol. 9, p. 197.
2. Old Statistical Account, Vol. 4, p. 17.

Apparently they might live in groups, and possess their acres runrig, indeed the Forfar parish account mentions little villages of country weavers who joined their horses together to form a plough (See ~~Fig. III, 33~~)[1]. Some, according to Wight had to rely on a neighbouring tenant to plough and dress their land, who, he says "will not engage but at a high rate, and never thinks of them while anything remains to be done at home."[2] It may be remembered, on the other hand, that some individual tradesmen might have their own plough and horses for their small possessions. (page37).

Weavers formed the most considerable body of labourers, and many of them seemed to spend a great part of their time as outdoor workmen, quite independent of any particular master. Wives and families would give valuable help, both in spinning or weaving and in the yards, thus freeing the men for odd job work, which by the 1760's might provide a considerable and substantial proportion of the annual income. The total income of such families must often have been considerably larger than that of many of the small tenant farmers. In Barrie parish we hear of twelve-day labourers who possessed no more land than their yards[3], but this was not the case on Glamis Estate. In Glamis Village for instance, the possessions of smallholders varied in size, but each tenant had some acres, which it seems probable, comprised a share of the infield and outfield land

1. Old Statistical Account, Vol. 6, p. 530.
2. Wight. Volumes on Husbandry, Vol. I, p. 274. (relative to Artherston Farm, near Coupar).
3. Old Statistical Account, Vol. 4, p. 247.

of the "Cornfield of Glamis"[1]. Early in the century there are records of "workmen" on the estate being paid in kind or money for services rendered, and it is interesting to note that at the same time it was customary for them to work in groups headed by a foreman or chief representative[2]. Thus in 1722, George Auchenwalls and partners were paid twenty-two pounds Scots money, one boll of meal and half a stone of cheese for cutting Lady Strathmore's hay. Later in the century there are frequent references to such groups, who might exhibit considerable versatility and mobility. There is, for example, a record of men going a distance of more than six miles from Glamis to Cardean Farm to take in the hay.[3]

S Thus we find, each with his small share in the soil, the independent labourer, the weaver squatter on the moorland edge, the weaver in the village and the cottager attached to his farm, while most bowed down of all by services and obligations, was the cottar who in the early eighteenth century worked for "My Lord" on the estates of Glamis and Castle Huntly, or Castle Lyon, as it was then called.

The continuance of feudal services well into the nineteenth century was the one marked exception to the general progressiveness of this section of Strathmore. These services seem to have been onerous and general, and although they had diminished considerably in most places by the end of the

1. Appendix, Glamis Estate, p. ~~18~~ 28, 29 and 26.
2. Ibid., p. ~~10~~ 20.
3. Ibid., p. ~~3~~ 9.

eighteenth century, the continuance of them was frequently deplored by the ministers in their parish accounts. Cottar, subtenant and tenant alike were subject to what the minister of Kirkden called "those badges of ancient slavery"[1].

A short survey of services and thirlage as they were known in this region may be given[2]. Services might be classified under the headings of Carriage and Bonnage or Bondage. Bondage implied the performance of work on farmland or peat mosses on behalf of a Superior, and might involve obligation to plough and harrow, spread dung for manuring the land, and to cut and dry hay, corn or peats. Carriage consisted of carrying home for the master peats from the mosses, and perhaps coal from some seaport, carrying victual rent to market, and on foot or with horse and cart, performing a certain number of errands, some of which might take more than one day[3]. It was said that in some places a tenant's obligations extended to as much as fifty-two days in the year, and it may be seen that they would have a crippling effect on his own personal labours.

Thirlage to miller and smith was universal at the beginning of the eighteenth century, and although an increasing number of mills were becoming free by the end of the century, many tenants were still complaining about paying multures to the miller. Such a situation was common in Scotland at that time, and indeed

1. Old Statistical Account, Vol. 2, p. 511.
2. Headrick, 1813, p. 223-229; Robertson, 1813, p. 213. Old Statistical Account, Dunnichen Parish, Vol. 1., p. 432 and 433.
3. Kirkden Parish account mentioned also the carrying of flax to and from the watering. Old Statistical Account, Vol. 2, p. 511.

in this respect, the Earl of Strathmore who was abolishing thirlage in the 1770's, was ahead of many Scottish landlords.

The extreme cases of Glamis, and more emphatically of Castle Lyon Estate, that were held in a species of feudal thraldom until the middle of the eighteenth century, may be attributed rather to the persistence of old custom than any conscious autocracy. On Glamis Estate early and enlightened progress was made towards improvement, and although that did not necessarily indicate a magnanimous spirit, the estate papers show that the smallest tenants were accorded considerate and fair treatment, according to the tenets of the time. The parish account of Longforgan in the Carse of Gowrie, gives detailed information about the estate of Castle Huntly during the period from 1672 to 1777 when it was owned by the Strathmore family, who gave it the family name of Lyon[1]. During the greater part of this epoch, in fact until 1750, when improvements were begun, the condition of the land was backward. The crowns only of the heavy clay ridges were arable, and since roads were poor and inaccessible to carts for almost half the year, there was little facility for transporting lime or dung. The houses of Longforgan were of turf and stone, thatched with turf and straw.

In 1672 Longforgan became a burgh of barony, and belonged entirely to the Estate of Castle Lyon. In 1775 there were a hundred and five families, and twenty years later there were

1. Old Statistical Account, Vol. 19, p. 459-551.

six hundred and thirty inhabitants, who included three considerable farmers, thirty-six small farmers or acre-men, and manufacturers, tradesmen and labourers who possessed no land other than their gardens. As late as 1750 the small farmers and acre-men had no tacks, being tenants at will. The people of Longforgan about 1750 were bound to plough the ground of the Mains, to sow, reap, and carry the corn into the barn-yard, thresh it out, and take it to market. They had to fetch limestones, slates, and sand, or anything else wanted for the castle or demesne, to plant all the trees on the estate, give so many days' labour in gardens or fields, and be ready at all times to go messages, on foot or on horseback. The Earl of Strathmore's officers actually seized a tenth of the crop that was grown yearly upon the lands of Longforgan as part of the rent, and carried it, corn and fodder, off the field. No one dared lead a sheaf of corn until that was done. Although conditions began to improve after 1750 and long leases were introduced, thirlage, bondage and carriages continued until the entry of the new owner who dispensed with thirlage and bondage. Such is the power of tradition that when the new proprietor in 1782 proposed to convert feudal bondages to a moderate money rent, some of the tenants were averse to the idea. An account of the eighteenth century development of the immediate lands of Glamis may be found in the section of the Appendix dealing with Glamis Estate, (pages ~~15~~ 25 to ~~19~~ 29). Here we see a more prosperous demesne, where the castle and mains were surrounded by an

"inner circle" of small tenancies that seem to have been ancillary to the upkeep of the whole.

A plan of 1746 shows the "Mains of Glammis" extending in all to seven hundred and fifteen acres of which two hundred and seventy-three comprised the Mains proper (See Fig. III, 28, p 31). Between it and what was known as the "Cornfield of Glamis" stood the village of Glamis, also a burgh of barony. Records show that wheat and other grains were grown on the Mains in the seventeenth century, and that in the 1740's ninety per cent of the Mains was enclosed, while there was fine pasturage for a great number of sheep and cattle.

In 1701 there were eleven holdings and fifty-three tenants within the Narrow Circle. These tenants paid varying customs, no doubt in correspondence with possessions that varied in size, and as was seen at Castle Lyon, there was a decided hierarchy, grading from tenants of individual holdings to smallholders or acremen, and finally to workmen who lost some of the independence of their class by possessing a few acres of land. One reference is made at this time to services exacted from these tenants. In 1705, seven towns "in Acres" in the vicinity of Glamis had to provide fourteen women for dressing lint and matting wool[1]. In 1720 there were twenty-eight plough oxen on the Mains of Glamis and in 1742 it is recorded that there were thirty-four tenants in the Lordship of Glamis who were obliged to till and harrow a whole week on

1. Appendix, Glamis Estate, p. ~~10~~ 19.

the Mains each year, and also to shear thereon at any time when required, besides hay winning and several other useful services[1]. Evidently a few ploughs operated on the Mains, but by 1742 the number of serving tenants had fallen from fifty-three to thirty-four. It is interesting to note that only Glamis Village of the eleven possessions of the Narrow Circle, named in 1701, can be found to-day. Even Newtown of Glamis was considered part of the Wider Circle. (See Fig. III[28] and compare with Ordnance Survey Map). In that Wider Circle however, the laird on occasion might reserve a share of a large farm, and have it worked by his servants the cottars. Instances of this are to be found on the farms of Thornton and Lindertis, the laird's share being called "My Lord's Rowme"[2].

S. Thus a powerful landowner made the most that the times and a large labour supply would allow, of his extensive and potentially highly productive acres. With so many hands, he could organise labour on a large scale, so that the tenants had some alleviation from the constant pinpricking of multifarious services. According to the Rentals of 1701 and 1773, smallholders contributed merely a few hens and hasps of yarn in customs, the more substantial tenants also giving coal[3]. The peat mosses of the estate were managed by grieves and paid workmen[4], and indeed money payment for services began to appear

1. Appendix Glamis Estate, p. ~~10~~[19].
2. Ibid., p. ~~9~~[18] and ~~10~~[19].
3. Ibid., p. ~~11~~[20] and ~~21~~[31].
4. Appendix, Glamis Estate Improvements, p. ~~24~~[69].

early in the century[1]. The tenants moreover seemed to be fairly secure in the tenure of their possessions. Although it is probable that in the early part of the century the tacks of smallholders would be verbal or held from year to year, it was observed that amongst receipts, notes and papers dating from the end of the seventeenth century, the same names frequently recurred, at intervals of some years, in connection with particular possessions, sometimes being succeeded eventually by the name of a son. When long leases began to be granted, tacks of twenty-one years were commonly granted to the possessors of pendicles, and their needs were taken into account when lands were laid out with the beginning of improvements. For instance a plan of 1768 for "a new Disposition of the Ground and Plantations of Glammis Castle", shows a great number of minute fields or parks regularly and conveniently laid out to accord with a population of smallholders.

In the middle of the eighteenth century, tacks for five years were commonly granted to farmers on Glamis Estate[2], and there are occasional references to tacks of similar duration prevailing on other estates about the same time. Although later in the century, lots of land were given to tradesmen on long leases, it is doubtful whether it had ever been the practice to give more than verbal tacks or yearly leases to cottagers and other smallholders. Instances quoted among the Guthrie Estate papers, show however that it might be quite a difficult

1. Appendix Glamis Estate, p. ~~10~~. 19 and 20
2. Ibid., p. ~~11~~. 21.

matter, legally to dislodge a tenant or subtenant who outstayed his merely verbal lease. Two such legal cases were maintained by a farmer and a minister against the Laird of Guthrie, in the seventies and eighties of the eighteenth century.

S Examination of the condition of the smallholders of this region, and of tenant farmers too, has added further emphasis to anomalies already discovered, but from it emerges an important clue to the understanding of the situation. Runrig had almost ceased to be, in spirit and in practice, there was little co-operation amongst equals and much seeming independence, yet class was completely dependent on class, and each was tied to the other in the persistence of the runrig tradition of services. In this land, so apparently favoured, there was one crippling drawback - shortage of fuel, and difficulty of procuring it. The countryside was so deficient in coal and wood, and even peat, that although the import of coal alleviated the lot of the upper classes, the plight of the lower orders was becoming desperate by the middle of the eighteenth century. This deficiency which so hindered the course of improvements, will be discussed later, at greater length, and it is sufficient here to state that peat mosses were commonly five, six or more miles from a farm and might lie on top of some hill, that the nearest port from which coal could be obtained might be as distant as twenty miles, and that within some parishes the only fuel to be obtained was turf cut from

moors, broom or heath. The labour involved in cutting, drying and carrying peats over indifferent roads was excessive, and might occupy a considerable part of the summer season, while we find typically described in Kinnettles parish account, how the meanest tenant who possessed a horse had to perform two horseback carriages as far as Dundee, twelve miles distant, greater tenants having to give two or three days' work of their carts[1]. It may therefore be understood why Roger declared that many servants were necessary even on small farms[2], and incidentally why, with the approaching exhaustion of a number of the peat mosses, the reason for employing a number of cottagers, through fear of inadequate supplies, became the reason for dispensing with them. Carriages continued well into the nineteenth century, accepted as an inevitable evil, and there are old people alive to-day who can remember the coal-carts in their home districts.

S Thus the larger the scale on which agricultural potentialities were exploited, the greater the number necessary to carry fuel as well as salt, dung, marl and latterly lime. We have some explanation of the presence of large satellite groups of tenants serving great landowners, of large farms with commensurate cot-towns, and finally of smaller farms with an unusually large number of cottars. But if lack of fuel was a source of dependence, it must be remembered that the weaving industry promoted independence. We have discovered the strong

1. Old Statistical Account, Kinnettles, Vol. 9, p. 214.
2. Roger 1794, p. 20.

hold that the smallholder had on the country, his recognised position, and often his surprising degree of independence. By the eighteenth century the active practice of runrig seemed to be confined mainly to this class, and to be by no means universal amongst them, but by a kind of agricultural inertia their smallholdings often in piecemeal allocation were to be preserved in some cases into modern times. An ordnance survey map of 1895 for instance shows the old township of Tigerton, north-west of Brechin, still preserving the semblance of runrig, with dotted lines showing individual rigs which had become laterally consolidated. This survival is consistent with the very gradual and haphazard evolution of the region.

S Throughout this chapter the evidence has consistently pointed to the predominant part played by abundant population in fashioning the pre-enclosure landscape[1]. We have seen a people increasing and spreading, overstraining the equalities of runrig, breaking down the system, and forming, all unconsciously a new pattern, adapted to the requirements of the large scale arable farmer, and the whole or part-time smallholder. It may be that the intermittent arrival of highlanders from the glens to find work in Strathmore served to weaken the old community spirit of the soil, and to foster the community spirit of the common labourers.

In conclusion, passing reference may be made to the peasant

1. For statement of hypothesis and resumés of various sections see pages 12-14, 16-17, 23-24, 31-33, 39-40, 47-48 52-53, et. seq.

with whom we began, with some conjecture as to the impression that the coming changes would make on him. As with every age, he must have known change. The yearly journey to Dundee, Montrose or Arbroath, for coals, may have been an innovation for him, but one which he could understand and accept. On returning from such a journey, he would know at once when he entered his home locality. The track from every fermtoun and cottage invariably connected with the ways to the kirk, the laird's mansion, or the mill, which one and all were obliged to use[1]. Whether as servant of the laird or cottar performing carriages for his farmer master, he would frequently travel along the road leading to the mansion with a load of tribute kane fowls, swine, geese, butter, bolls of bear or meal, and spindles of yarn. As the century progressed his load would become lighter as casualties were gradually converted to money payments. Eventually he would take his grain to the mill that was most convenient for him, and thereby in his freedom from thirlage, lose a source of mutual grumbling with his neighbours. As the process of enclosure began, he would observe that there was no longer room for many of the old tracks, and miss seeing his acquaintances travelling along their various paths to church on Sundays. As the new through roads were constructed with more distant destinations in view, he would be sensible rather of the loss of the old unities than of increased amenity. The familiarity of common concourse

1. ~~See Photostats of Edzell and Lethnot parishes showing old and new roads. (Folder 12 and 13).~~

and shared burdens would do much to even out the inequalities of class, but now there was a new attitude. The sight of the laird's officers staking out the straight boundaries of new farms across the old familiar commons and roads, would perturb our peasant more than the actual enclosing dykes. He had seen dykes of turf before, but they were for keeping out the sheep and cattle, and not also human beings.

The Shaping of a New Landscape.

Strathmore, and indeed all the lowlands of Angus and Kincardine, were receptive to the new doctrines of the Agricultural Revolution. The setting was favourable, and so far removed was the landholding system from the excessive fragmentation of the latter days of runrig, that it could be said that the countryside was ripe for new developments. Thus the enclosure movement did not make a shattering impact on the existing system, but rather gave accentuation and acceleration to trends that had already begun.

Attention focuses on the landowner, the instigator and financier of improvements. If it can be said that there was a regional type of laird, fashioned by a common environment and the sharing of similar views and aims, the Strathmore laird should be described as an early exponent of the new ideas, and an undoubted enthusiast. He was also manifestly a personality with varying character, capacity and capital, so

that even amongst the class of large landowners, it is impossible to make generalisations. Characteristically, however, he had his share of the inherent advantages of the region - lowland seldom rising to five hundred feet, warm soils, a climate suitable for the development of cereals or mixed farming, and a plentiful labour supply of workmen of local or highland origin.

Initiative and enterprise were by no means confined to the landowner. The establishment of so many farms of all sizes that were possessed by one or two principal tenants, had fostered the individualistic spirit which may in turn breed ambitious effort. Certainly we hear from Wight in his survey made in the 'seventies, of substantial and expert farmers, some of whom were in possession of more than one farm. According to him, the zeal for improvements had so permeated Angus society that the Brechin innkeeper thought it worth while to study husbandry, so that he might impart information[1].

Smallholders appear to have accepted the new order, and in most districts they were accorded a measure of consideration. Although the attitude towards cottagers varied, and some were to give way to the servant staying with his master, and the day labourer, the total increase of population, recorded for the region between 1755 and the seventeen-nineties, shows increases in rural parishes as well as urban districts. This was in part attributable to expansion of the weaving industry.

1. Wight, Survey VIII, Vol. 5, p. 32.

The chief hardship which these people had to bear was the rapid depletion of their fuel reserves as enclosure proceeded. We hear, perhaps typically, of tenants being fined five pounds Scots each at the Barony Court of Lower (Lour) in 1747 "for going into a large broom park under cloud of night, pulling up, and otherwise destroying the same," to the great hurt and prejudice of the laird[1].

The profound influence that the fuel problem had on the economy of this region has been demonstrated. The progress of improvements was similarly to be hampered by a general scarcity of fertilisers and other raw materials, and the difficulty and expense of procuring them. Marl and lime were sporadically distributed, wood was scarce, while coal had to be imported, and as improvements progressed there was constant lament about the cost of these commodities. Some who had local supplies of limestone which had been worked when wood was plentiful, were unable to resume the working of it, due to the impossibility of obtaining fuel at an economic price[2]. Nevertheless farmers were prepared to go considerable distances in search of manure or fuel, as may be seen on the map showing distribution of fertilisers, etc. (See Folder 15 - Map) and the energy with which some sought on their own lands for marl or lime is indicative at once of their zeal and the gravity of the situation. Thus disposition of fertilisers, condition of

1. Headrick, 1813. Appendix, p. 83.
2. e.g. Old Statistical Account, Clunie Parish, Vol. 9, p. 255 and 256.

roads, and distances, whether to local resources or to the coast, were matters of moment to improvers in Strathmore, and might be quoted as predisposing features in advertisements of farms to let.

The localities where leaders of the new movement were to arise, and the types of people likely to take the initiative, might have been an object of accurate deduction in this region, based on such factors as soil fertility, altitude, conveniency of situation in the terms above described, reserves of fertilisers, which to the landowner would be a source of income as well as manure, public positions, extent of lands and wealth. The factor of personality which was to produce the disinterested idealist, George Dempster of Dunnichen, is not so predictable, yet even he had marl reserves which he exploited to the full. Thus we find the brothers Scott, owners of Rossie and Dunninald estates near Montrose, emulating the East Lothian farmers, and commencing improvements as early as 1740 on the rich soils of the coastal lowlands, where wheat had long been grown. On the comparatively level and fertile lands of Meigle parish near Coupar in Strathmore, the Statistical Account informs us that improvements had been prosecuted with great ardour and success since 1745. A noted gentleman is mentioned who had enclosed his lands and furnished his tenants with marl[1]. This no doubt, was the Honourable James Stewart Mackenzie, Lord Privy Seal, owner of Belmont Estate,

1. Old Statistical Account, Meigle. Vol. I, p. 513 and 514.

who according to Wight, led the way to improvements in Angus[1]. The influence of the chain of marl-yielding lochs stretching eastwards from Forfar Loch, and of Dempster's farming society[2], gave rise to a series of early estate improvements, the undoubted leader being the Earl of Strathmore. It may be recollected that his parks, enclosures and plantations were outstanding in the early eighteenth century, that the Mains of Glamis was efficiently enclosed by the seventeen-forties, and that Wight found his improvements surpassing any others that he had seen[3]. The possible magnitude of his undertakings may be gauged by the fact that about 1770 he succeeded, after tremendous and prolonged effort on the part of large squads of labourers, in lowering the level of water in Forfar Loch sixteen feet, thereby exposing great quantities of moss and marl. The venture cost him about £3,000 sterling[4], but his annual net profit from sale of marl might be as much as £850[5].

Although the mere introduction of a new crop into a district is of itself no criterion of progress, yet it frequently heralded more widespread adoption of the crop, and the circumstance of introduction may be a matter of interest. The Statistical Account for Dundee records the import in 1745 of a hundred pounds of clover seed[6], and in 1746 or 1747 a

1. Wight. 1778. Volume 1, p. 267.
2. Introduction, page 4 .
3. Introduction, page 4 .
4. Old Statistical Account, Forfar, Vol. 6, p. 527 and 528.
5. Appendix, Glamis Estate Improvements, p. 7. 48.
6. Old Statistical Account, Vol. 8, p. 222.

a farmer of Logie Pert near Montrose is said to have introduced red clover into the county of Angus[1]. Having sown a ridge with clover seed, he obtained a public proclamation warning people to keep their sheep and cattle from it. This aroused widespread interest and curiosity. It is stated in the Statistical Account for Forfar that clover was first sown in the burgh acres there about sixty years before the date of the account, that it aroused great curiosity, and became a general crop some twenty years later[2]. Mr. Watson of Turin, again in the progressive region, near Forfar, told Wight that shortly after 1765, he raised ryegrass which was new in these parts, but added ruefully that it was now (the later 1770's) in the hands of every farmer[3]. According to Robertson, the cultivation of clover and artificial grasses became general in Kincardineshire about 1770, and it seems likely that the same may be said of Angus[4].

The potato was introduced in 1727 by an old soldier who had travelled in Ireland[5]. The people of Marykirk village, where he lived for a year, were curious enough to steal his crop, but none cultivated it after he left. In Angus, potatoes were grown in gardens about 1745, but a number of years elapsed before it occurred that they might grow in an

1. Headrick, 1813, p. 344 and Old Statistical Account, Vol. 9, p. 44.
2. Old Statistical Account, Vol. 6, p. 518.
3. Wight, 1778, Vol. 1, p. 337.
4. Robertson, 1813, p. 294.
5. Robertson, 1813, p. 277.

open field[1]. In Kincardineshire there were few farms with more than an eighth of an acre devoted to potatoes till about 1775[2]. Although potatoes were commonly grown in Angus by the end of the eighteenth century, they seem to have been more in vogue in the towns than in the country. Although some reliance might be placed on them in country places, the minister of Kirkden parish made clear at least his attitude, when he declared that potatoes were more used in the towns, and were seldom eaten in his parish, even by those on public charity, except in the months of October, November and December[3].

Turnips were introduced into Angus and Kincardine about 1753 but were not cultivated generally in Kincardine until about 1775 and at least ten years after that in Angus[4]. It may be that Headrick was mistaken in fixing this date for Angus, because by the time of the Statistical accounts, this was obviously a popular crop, with a place in most rotations.

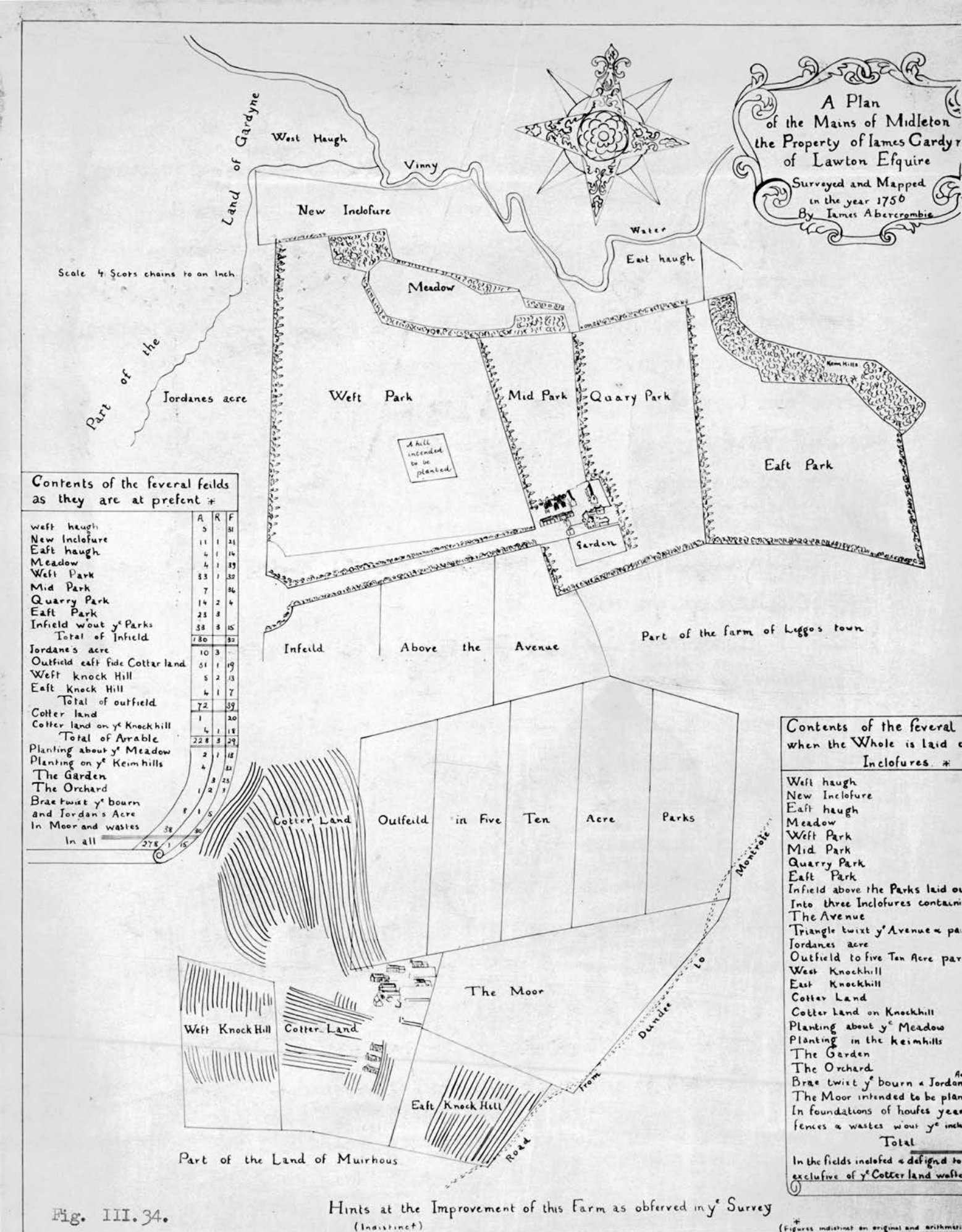
Wight's attitude to Angus was favourable, when he visited it in the seventeen-seventies. He commended the industry and skill of many improvers, admired their enclosures and the visible effects of the use of shell-marl, and noted that although a day-labourer earned more than his equivalent in the Lothians, (a shilling per day for a man, and eightpence for a woman) he worked from four o'clock in the morning until eight

1. Headrick, 1813, p. 320.
2. Robertson, 1813, p. 277.
3. Old Statistical Account, Vol. 2, p. 514.
4. Headrick, 1813, p. 327.
   Robertson, 1813, p. 281.

at night, in comparison with ten hours in the Lothians[1]. According to him, farmers ate quantities of flesh, butter and cheese, and in general had more expensive food than was common in most counties[2]. It is rather surprising that the first comment made by Wight on Kincardineshire was that agriculture made little figure there, except among a few patriotic gentlemen[3]. In 1813 Robertson could not report favourably, and declared that "for the ornamental, as well as the beneficial improvement of enclosing, the county of Kincardine is not remarkably distinguished. The great body of the county remains still altogether open and undivided[4]". It must be remembered that his region extended to Dee-side, and throughout the book more favourable reports are given of estates lying close to Angus, including those of Burn, Arnhall, and Balbegno, whose plans have been examined. (See Folder, 14 and 5). Perthshire covers such a large area that it is impossible to apply generalities to its eastern fringe.

An attempt has been made to show the progress of the enclosure movement, as indicated on the estate plans which have been examined. This may be seen on the large map with a scale of an inch to a mile. (~~Folder, 1~~). Amount of enclosure is shown by a system of shading, using colours that correspond to twenty-year periods, from 1740 onwards. Since the two ends of the scale are significant, that is, where enclosure is negligible, or where it is almost complete, the scale has been

1. Wight, 1778, Vol. 5, Survey VIII, p. 26.
2. Ibid., Vol. 1, p. 266.
3. Ibid., Vol. II, p. 1.
4. Robertson, 1813, p. 245.



Contents of the feveral feilds as they are at prefent *

	A	R	F
weft haugh	5		31
New Inclofure	11	1	21
Eaft haugh	4	1	14
Meadow	4	1	39
Weft Park	33	1	32
Mid Park	7		36
Quarry Park	14	2	4
Eaft Park	23	3	
Infield w'out y^e Parks	38	3	15
Total of Infield	180		32
Iordane's acre	10	3	
Outfield eaft fide Cottar land	51	1	19
Weft knock Hill	5	2	13
Eaft Knock Hill	4	1	7
Total of outfield	72		39
Cotter land	1		20
Cotter land on y^e Knockhill	4	1	18
Total of Arrable	228	3	29
Planting about y^e Meadow	2	1	12
Planting on y^e Keim hills	4		12
The Garden		3	23
The Orchard	1	2	3
Brae twixt y^e bourn and Iordan's Acre	8	1	5
In Moor and wastes	38		30
In all	278	1	15

Contents of the feveral
when the Whole is laid
Inclofures *

Weft haugh
New Inclofure
Eaft haugh
Meadow
Weft Park
Mid Park
Quarry Park
Eaft Park
Infield above the Parks laid ou
Into three Inclofures containi
The Avenue
Triangle twixt y^e Avenue & pa
Iordanes acre
Outfield to five Ten Acre par
West Knockhill
East Knockhill
Cotter Land
Cotter Land on Knockhill
Planting about y^e Meadow
Planting in the keimhills
The Garden
The Orchard
Brae twixt y^e bourn & Jordan
The Moor intended to be plan
In foundations of houfes yeas
fences & wastes w'out y^e inch
Total
In the fields inclofed & defigned to
exclufive of y^e Cotter land wafte

Fig. III. 34.

Hints at the Improvement of this Farm as obferved in y^e Survey
(Indistinct)

* (Figures indistinct on original and arithmeti

apportioned unequally. An amount of generalisation was essential and indeed inevitable, because even on small estates or individual farms, enclosure seldom proceeded evenly. (See Fig. III,34). Where farm rundale still prevailed, where boundaries were not indicated or in a transitional stage, it was necessary to average the degree of enclosure. The later plans of the nineteenth century do not necessarily prove late enclosure, although, where no trace can be found of earlier plans, such an inference may be drawn. This map adds confirmative evidence to the foregoing survey of the progress of improvements, although unfortunately there is a great preponderance of uncoloured map. Correspondence of early enclosure with fertile districts or those endowed with deposits of marl or lime may be seen, and there is some indication of slower development in districts more remote from fertilisers and the coast, although one would expect the hillfoot and mountainous estates to be more backward, for that reason alone. (See also Folder Maps, 15, ~~16~~ and 17).

It is obvious that if a detailed account is to be given of the process of enclosure and its implications, that documentary sources must be drawn upon in addition to the testimony of plans, and in this case, the account is justified alone by the wealth of information available in the Charter room of Glamis Castle. Here are to be found in extraordinary detail, accounts of the organisation and cost of all kinds of improvements during the period of greatest activity from 1765 onwards. Only from a study

of such detailed information can an accurate appreciation be obtained of the enormity of the task which the improvers set themselves, of relative costs of works undertaken, and the time and labour involved in various processes. It is for instance enlightening to discover how much labour went to the construction and filling of the laird's ice-house, or the infinite pains taken in such works as the lowering of a hillock or knowe by removing earth and replacing the turf, the demolition of old roads and dykes and transference of stones to the sites of new roads, and the construction of roads in the most scientific manner that was known[1]. Rentals and other estate papers such as those of Kinnordy and the Guynd, give additional information of some interest.

S To conclude the survey of the progress of improvements in this region, it may be said that the evidence furnished alike by the Glamis papers, by Wight in his Survey, by the dates when new significant crops came into general use, and by the map showing amounts of enclosure, gives the impression that the enclosure movement increased in momentum and became widespread during the seventeen-seventies.

The Management of Improvements.

Contemporary accounts give the impression that the absentee landlord was unusual in Strathmore, and Headrick in 1813 gives confirmation for his period[2]. Most proprietors, he said,

1. Appendix Glamis Estate Improvements, p. ~~20~~ 63, ~~8~~ 49, ~~14~~ 56 and ~~15~~ 57
2. Headrick, 1813, p. 113 to 115.

managed their own affairs, and those who did employ factors, selected respectable well-qualified people to reside on their estates. The larger landowners with widely distributed estates had perforce to employ a number of factors and other executants. Certainly the Strathmore estate factors were efficient, and had a most detailed knowledge of affairs. According to Wight, one of the Strathmore factors, a Mr. Menzies, was in such close touch with the tenants that he was "everyday everywhere" attending to the execution of plans[1]. When the lairds turned their attention to improvements, they commonly employed surveyors of some repute, and they with their wide experience, doubtless exerted considerable influence on the progress of events. The Earl of Strathmore employed as many as five surveyors at different times, and these included the celebrated Thomas Winter, Lewis Gordon and John Ainslie. The 1746 plan of Mains of Glamis is an excellent production, typical of Thomas Winter, and contrasts somewhat with the rather more careless style of the plan of Pitpointie Farm drawn in 1759 by Lewis Gordon (Folder, 6), who nevertheless was doubtless an accurate surveyor. John Ainslie of Edinburgh drew plans of Kinnordy Estate, and it is presumed that he is the Mr. Ainslie who reported on and valued the lands of Glamis, prior to 1773. Two other eminent surveyors who drew plans for estates in Strathmore were John Home, and William Blackadder who worked in the early nineteenth century, sometimes with his headquarters at Glamis. William

1. Wight, 1778, Vol. 1, p. 283.

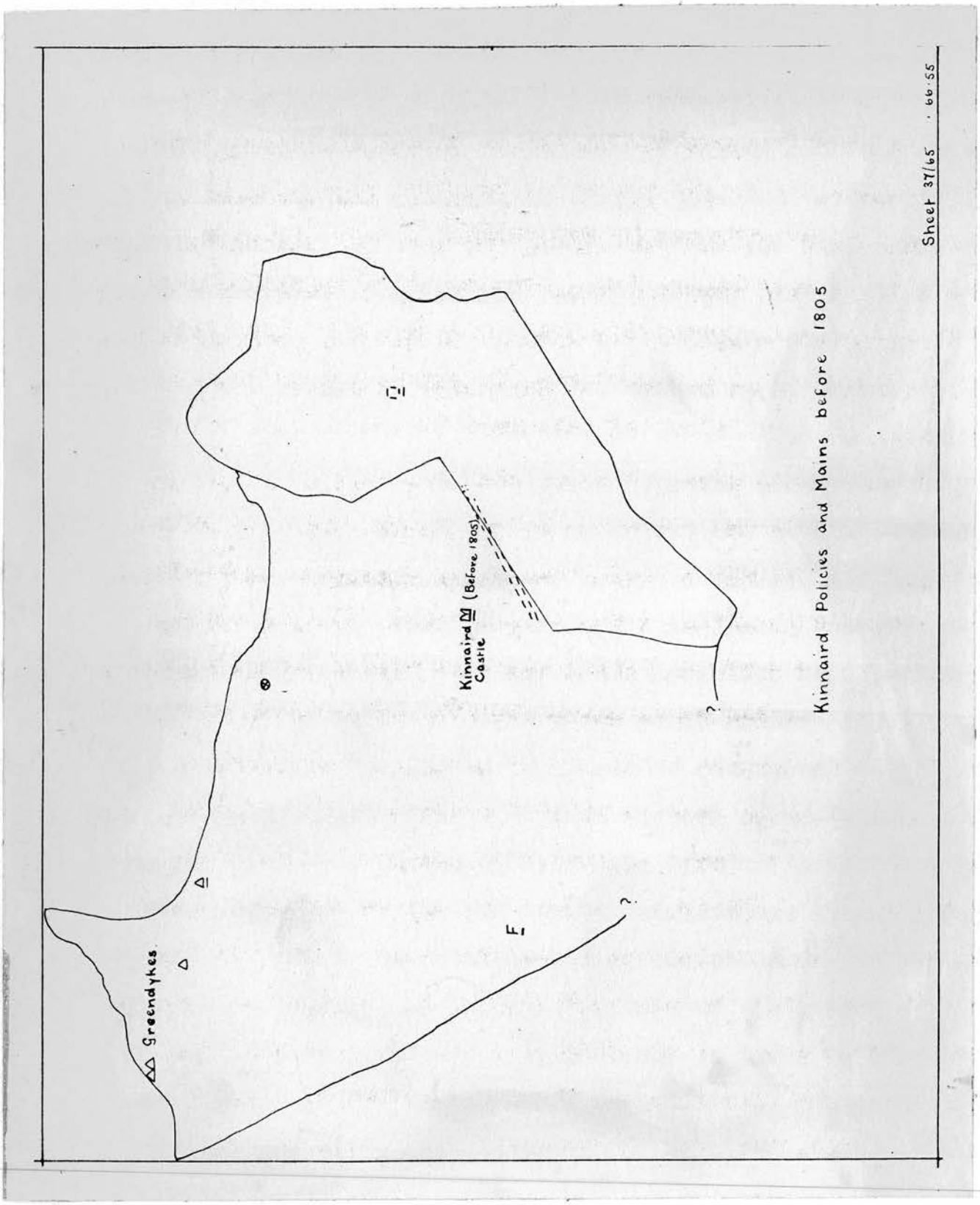


Fig. III. 35. Kinnaird Castle Policies in process of extension. Note the truncated road, creation of new Mains steading, and Deer Park.

Panton and James Abercrombie were frequently employed in Angus, and it was James Abercrombie who was in charge of the improvements at Glamis during the period of greatest activity, from 1765 onwards. Not only was he responsible for the work of surveying land and drawing plans, but also for the administration of all the estate improvements. For this, he received a salary of forty pounds sterling per annum. He had two assistants and could command large numbers of labourers to assist him in his operations.

Improvements normally began with the home farm and the policies, and in the designing of the latter the hand of the surveyor can plainly be seen. Here, as elsewhere in Scotland, were produced grandiose and highly-coloured designs for the improvement of policies, which may have flattered the landlord, but which he seldom found practicable to adopt in their entirety.[1] The larger landowners could afford to lay out extensive parklands and pleasure grounds befitting their imposing seats, but the smaller lairds were content with modest policies that were seldom purely ornamental. Before the end of the eighteenth century the neat enclosures of the Mains of Glamis were swept away to give place to parkland similar to, though not so extensive as that shown on the 1768 plan for a new disposition of the ground and plantations at Glamis, executed by Abercrombie (See also Fig. III, 35). On the other hand, designs for the

1. See Introduction, p. 18 for further discussion of this type of plan.

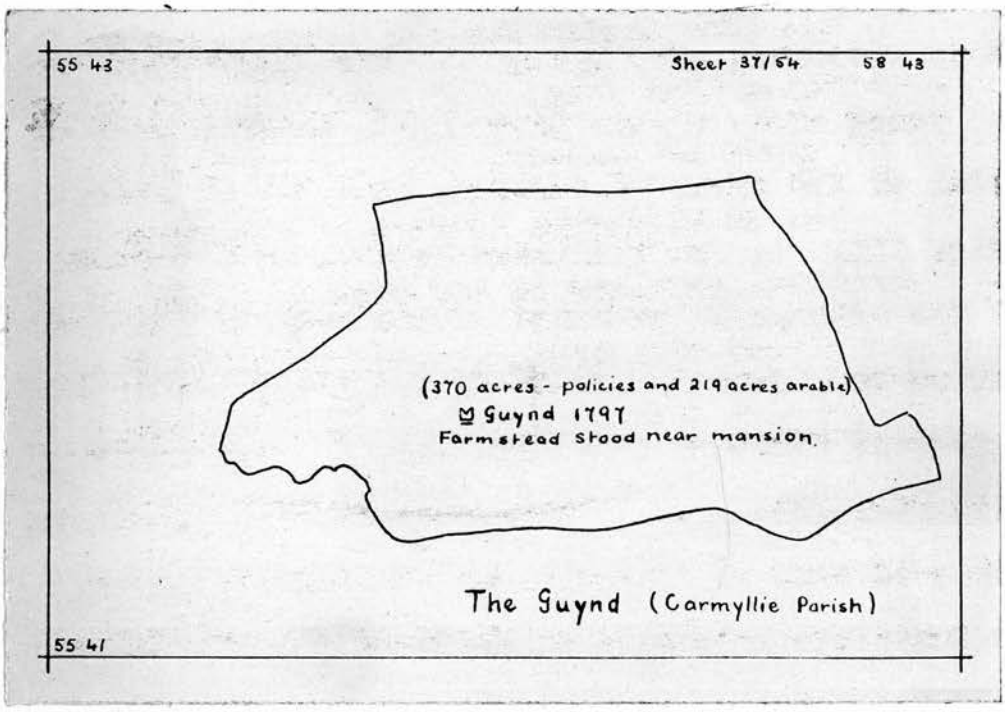

55 43
Sheet 37/54
58 43
(370 acres - policies and 219 acres arable)
Guynd 1797
Farmstead stood near mansion
The Guynd (Carmyllie Parish)
55 41

Fig. III. 36.

improvement of policies were almost completely disregarded on the two smaller estates of Guynd and Middleton. It is interesting to note that in both instances, as with Glamis, the designs were drawn after the enclosure of the lands adjacent to the mansion had been effected. The Design for the Improvement of Guynd came two years after a plan dated 1797, which showed 219 acres of a total of 370 acres of demesne, laid out in arable fields (See Fig. III,36). On Middleton Estate, no allowance had been made for ornamental parkland in the plan of 1756, which showed regular parks enclosed with ditch and hedge beside the mansion and adjacent fermtoun (See Fig. III,34, p67) and ordnance survey map with Fig. III,7,p8). In this case as with Guynd, the later plan achieved some modification of the earlier design merely in the immediate precincts of the mansion. The present owners of these two estates, when confronted with the elegant but unfulfilled designs, regarded them with the same mixture of mystification and amusement as the laird of Balnamoon who pointed to a proposed extension of the policies designed in 1812, to give a sweeping vista reaching to the summit of Caterthun Hill, a mile distant from the present boundary wall (See Fig. III,—). Such examples make it easier to understand the attitude of the minister of Fettercairn who described the adornment of part of his parish, and hoped that the improvements would in time be profitable as well as ornamental[1]. In 1813, Headrick stated that most of the resident proprietors in

1. Old Statistical Account, Vol. 5, p. 331.

Angus who had farms in their natural possession, commonly subjected their parks or pleasure grounds to the same rotation as the rest of the farmland, though commonly keeping the enclosure nearest the house longer in pasture than was customary elsewhere[1].

In determining the manner in which improvements were to be carried out on farms not in his natural possession, the landlord doubtless was prompted by a desire for efficiency. How far could he trust the tenant with the assiduous and intelligent prosecution of the necessary works, and how was he to obtain a due return from him? His chosen method of dealing with the situation is of interest from the theoretical point of view, and indicative of the relationship existing between himself and his tenants. It would moreover be well to have a clear understanding of the conditions under which improvements proceeded, before embarking on a discussion of the actual process. The manner of letting a farm, the length of lease granted, and stipulations relative to enclosure and expenditure, reveal the degree of confidence placed in the tenant, and the sharing of responsibility in this matter.

The rouping of a farm is doubtless the most successful method of obtaining a high rent, but a practice that might well be unacceptable to the tenantry. The one advertisement which has been disdovered, for the roup of a farm on Glamis Estate, provides inconclusive evidence, but it is likely that

1. Headrick, 1813, p. 349 and 350.

such a method would frequently be employed on larger estates under impersonal management. Unfortunately no further information is available for Angus, but Robertson in his Survey of Kincardineshire declared that rouping was not very general with lands on lease, but had long been in practice in letting grass parks for pasture from season to season[1]. In a progressive and well-peopled region such as this, where there should have been little difficulty in procuring suitable tenants and where it is said that good relations generally existed between landlord and tenant, it is unlikely that the methods of widespread advertisement, and rouping of farms were frequently employed.

A tenant could not be expected to expend effort on improvements if he was given neither present security nor the prospect of future benefit from his labours. In such districts as the Barony of Clunie, or Glenisla, where leases were commonly short, of five, seven or nine years duration, or even non-existent, at the end of the century, it is evident from contemporary accounts that the enclosure movement had not begun or was in its earliest stages. Some of the early improvers granted long leases of two, three or four times nineteen years, for the encouragement of their tenants, and apparently through inexperience or confidence in the good intentions of the farmers, did not bind them to a definite programme, or stipulate a rising scale of rent. Robertson commented on the moderate rents of a great proportion

1. Robertson, 1813, p. 55.

of the lands of Kincardine in 1813, due to their being held in leases that were entered into many years before,[1] and the Statistical Account of Logie and Pert parish records that some farmers enjoyed long leases at old rates and might thus become rich[2]. The minister of Maryton, another parish in the progressive district near Montrose, spoke of the pernicious effect of long leases and low rents, and stated that because of that, much fine land was let so low as ten shillings an acre[3]. It was perhaps partly a reaction to this that caused landlords to become more cautious when granting leases during the period when the results of improvements were beginning to be felt, and rents were beginning to rise. Robertson stated that at this period some landlords curtailed leases to fourteen or even seven years[4]. An interesting instance occurred on Guthrie Estate in 1789[5]. The laird of Guthrie stated in his petition that some of his leases were about to expire, and there being reason to expect considerable rises of rent, he resolved that the tenants in possession should have the preference, on agreeing to give the same or even nearly the same rents, which he might expect from others. He accordingly had granted a verbal tack to a tenant for the farm of "Stonny Shade", giving it for fifteen years instead of the nineteen that the tenant had desired, although he is known

1. Robertson, 1813, p. 213.
2. Old Statistical Account, Vol. 9, p. 33.
3. Old Statistical Account, Vol. 9, p. 399.
4. Robertson, 1813, p. 226.
5. Petition of John Guthrie of Guthrie to the Lords of Council and Session. Family papers.

to have granted written tacks for nineteen years during the previous fifteen years. The gist of his complaint was that the tenant would not or could not pay the new rent which had increased from £10 plus casualties to £21 plus casualties. The tenant defended himself by declaring that he had been given no written tack, while the laird replied that he had never asked for one. When improvements were about to commence on a farm, there might be a period when no tacks were granted, and such an instance occurs on Glamis Estate. The Rental of 1773, a time when leases of nineteen years or longer were usual on the estate, reveals that the five tenants of Clippethills Farm had no tacks. This may have been a period of marking time until new "enclosing" tenants should arrive[1].

By the end of the eighteenth century the lease for nineteen years or longer had become customary, now with safeguarding conditions and stipulations, and was granted even to smallholders such as the Glamis pendiclers or the possessors of Forfar burgh acres[2]. The greater the part that the tenant was expected to play in the improvement of his farm, the longer the tack that he would require. On the Panmure Estate in Lethnot parish, leases for two nineteen years and a life were given in the lower part of the parish and nineteen years and a life to those on the hillier districts. Tenants had to build substantial houses, enclose certain portions of the farmland, bring in and improve baulks and suitable pieces of waste ground,

1. Appendix Glamis Estate Improvements, p. 32.
2. Old Statistical Account, Forfar, Vol. 6, p. 517.

to plant an acre or less of young trees and keep them adequately fenced[1]. According to Kinnordy Estate papers (disjointed notes) farmers possessing leases of nineteen or fourteen years, might be required to enclose a grass park annually, and there is one note to the effect that the cost of erecting dikes would be met at the end of the lease.

The management of affairs on Strathmore estate won the praise of Wight. He declared that the Earl enclosed the whole of the farms at his own expense, the tenant paying 5% interest on money laid out, and that he erected good farmhouses, grudging no expense[2]. Certainly he and his officers took the greatest share of respondibility for the carrying out of improvements, and relied mainly on gangs of labourers working in their direct employ. The cost of improvements effected by these workmen might be charged against particular farms, whose tenants would then be liable to pay interest on the sums expended. Even when the tenant played a small part in the actual enclosure of the farm, he was commonly granted a lease of at least nineteen years. Some of the Glamis tenants were however held responsible for the enclosure of their farms, and one instance of this is quoted in the Appendix (Glamis Estate Improvements, pages 44 and 45). After the farm of Balgownie had been surveyed and the enclosures staked out by workmen, the two principal tenants were bound, by leases which were to extend for thirty-six years from 1767, to enclose the whole farm by ditch and hedge within the first ten

1. Old Statistical Account, Vol. 4, p. 10.
2. Wight, 1778, Vol. 1, p. 275.

years of the lease. The quicks were to be furnished by Lord Strathmore, and interest at the rate of 7½% was to be paid on money loaned for the purpose of enclosing. According to Wight, fences were upheld for the first seven years of a lease at the mutual expense of the Earl and his tenant, and they were well kept and thriving[1]. Tenants might be given allowances in money or in meal, for constructional expenses, liming of ground, or farm space taken up by ditches[2]. Apparently the rate of interest paid by the tenant might vary from 5% to 7½%[3].

When leases of nineteen years or more were given during the improving era it was natural that rents should increase at stated intervals, so that the landlord might share in the increased productivity of farms. On Glamis Estate two increases were commonly stipulated within periods of nineteen or twenty-one years[4]. In Lethnot parish increases occurred at the end of each nineteen years[5].

S The absence of adverse criticism in contemporary accounts relative to leases and tenure generally, the favourable comments of Headrick on the subject, and the evidence cited above, give the impression that the attitude of the Strathmore lairds to their tenants was reasonable and enlightened, that indeed in the early days of improvement they were sometimes imprudently generous, and that smallholders here as compared with those in

1. Wight, 1778, Vol. 1, p. 276.
2. Appendix Glamis Estate, page 35 .
3. Ibid., pages 34 and 35 .
4. Ibid., page 34 .
5. Old Statistical Account, Vol. 4, p. 10.

other parts of Scotland, were magnanimously treated[1].

The Process of Enclosure.

The actual enclosure movement has been selected for discussion before other improvements, because of the underlying aims and motives which it reveals, and because enclosure was commonly effected before other improvements began. On the Strathmore Estate for instance, the farm of Cardean, which comprised some three to four hundred acres of potential arable land, was entirely enclosed with thriving hedge and ditch enclosures in 1771, when an "improving" tenant entered it, yet the land was in an exhausted condition and had lain in natural grass for two years[2].

Enclosure had been proceeding in a desultory and self-contained fashion on laird's demesne, or on the holding of some enterprising tenant, before large-scale planning of enclosures began (See Fig. III,87,p30). On minister's glebes, or on such small composite holdings as those which appear on the photostat of the Barony of Clunie (Folder, 8), enclosures of this period may be seen. They usually conform in generalised fashion to the lie of the old rigs, and consequently appear to fit more harmoniously into their setting than some of the later enclosure grids, although destined often to give way to them.

When the enclosure movement gathered momentum and the laying

1. Headrick, 1813, p. 249.
2. Wight, 1778, Vol. 1, p. 293.

out of whole estates came under consideration, enclosure grids might be planned on a wide basis, and naturally did not always accord well with natural features. Abercrombie, in laying out farms of Strathmore Estate, seemed to regard enclosed farms as sets of enclosures, some of which might be detached and let independently, and both on this estate and that of Arthurstone in the parish of Coupar Angus, Wight records instances of complete reorganisation of farms[1]. The proprietor of Arthurstone divided his estate into "farms of proper size with centrical farmhouses", and on Strathmore Estate according to Wight, the Earl of Strathmore divided farms so that the smallest occupied a plough, while as much as 2,000 acres of rough land might be selected and divided into four farms on which good offices and farmhouses were erected[2]. Unfortunately details were not given, which might have substantiated this rather surprising statement. Contemporary theories about the suitable division of farms to conform to the new systems of husbandry had considerable bearing on the regulation of farm acreages and enclosures. The Cropping system adopted on the Carse of Gowrie favoured the division of farms into five or six parts, while on upland farms further inland, longer rotations necessitated a greater number of divisions[3]. A reporter oh the condition of Kinnordy Estate in 1790, (who may have been John Ainslie), made reference to rotation of crops and farm divisions on the Carse of Gowrie,

1. Appendix Glamis Estate Improvements, p.44.
2. Wight, 1778, Vol. 1, p. 273, 275 and 277.
3. Old Statistical Account, Vol. 19, p. 520.

when mentioning that the common division of a farm on Kinnordy Estate was into eight parts. The farm of Hatton of Eassie on Strathmore Estate was similarly divided into eight parts, although they were not all to be possessed by the one tenant[1]. According to a number of references in parish accounts of the Old Statistical Accounts, it was during this period of widespread planning that in the 'sixties and 'seventies, landowners began to take particular interest in the reclamation and partition of common muirs.

In his selection of the actual size of enclosures, the landowner or his factor-surveyor must have been influenced by a complexity of factors. He naturally wished to achieve maximum productivity of his land, and would lay it out to suit the type of husbandry most calculated to give him a high return. Wight remarked that the great object on Strathmore Estate was to bring the land to bear good grass[2], and certainly the constant traffic passing along the drove roads of Strathmore, and the admirable conditions existing for the rearing or fattening of cattle, gave every inducement to landlords to let out grass parks to graziers from season to season, at high rents. One farmer is known to have enclosed his farm with stone dikes and to have subdivided it into fields of fifteen acres suitable for cattle, and enclosures of fifty acres suitable for sheep[3]. Another lucrative source of income was the letting out of fields of flax, or of potatoes

1. Appendix Glamis Estate Improvements, p.44.
2. Wight, 1778, Vol. 1, p. 284.
3. Ibid., Vol. 1, p. 325.

to tradesmen. The Howe of Angus produced considerable quantities of flax and commonly a field of flax was from twenty to forty acres in size. On the estate of Castle Lyon on the Carse of Gowrie, one farmer divided his flax field which varied from 20 to 45 acres into parcels, of 400 square ells, and let these to tradesmen who gave as much as £11 or £12 of rent per acre[1]. On the same estate potatoes and beans were let off to small tenants in the manner common in Strathmore and in the neighbourhood of all the towns or large villages of Angus. Along the coast or on lands more suited for the large-scale production of wheat, enclosures were suited to the production of that crop.

The landlord could not however consider merely his own interests, and had to establish large numbers of smallholding farmers. On the Guynd Estate, when farms were being laid out, the proprietor remarked that the plan showed possessions whose enclosures were too small and too few "to give man or beast's meat to a resident family." Unfortunately the notebook dated 1793, does not mention the size of the enclosure. As has been remarked, the Strathmore Estate catered for the smallholder. Small infield and outfield parks of four to eight acres might be possessed by these small tenants[2], and as was common throughout Strathmore, rows of smallholdings of ten acres or less, possessed mainly by part-time weavers, were strung out along roadsides. The estate plan of the lands of Burn and Arnhall, (1819), shows an extraordinary development of tiny enclosures,

1. Wight, 1778, Vol. II, p. 61 and Vol. 5, Survey VIII, p. 25.
2. Appendix Glamis Estate, p. 19.29.

numbers of them being of no more than one or two acres. (See Folder, 14). This may be associated with the prevalent practice of feuing out strips of moorland to smallholders, with the prime intention of reclaiming the land. A close network of enclosure ditches would no doubt facilitate drainage.

Since thorn hedges grew well throughout most of this region, and suitable stone for constructing dikes was commonly available, the type of enclosure constructed was not an important factor here, in deciding the size of enclosures. On Glamis Estate as elsewhere on the lower parts of Angus, the hedge and ditch enclosure was prevalent, but the more expensive stone dike predominated, and was constructed on parts of farms where stones were readily available or where such an enclosure was deemed more suitable[1].

The old divisions into infield and outfield might have some influence on the new pattern of enclosures. The laird of Ballinshoe divided his infield land into enclosures that varied from eight to eighteen acres, while the outfield enclosures were much larger, one that was purely a sheep or cattle park containing two hundred acres[2].

The Scotts of Rossie and Dunninald estates near Montrose were early improvers who perforce had to experiment with methods of enclosure. Their enclosures varied in size from seven to twenty acres, and it is probable that they discovered later that larger enclosures of the ten to twelve acres which

1. Headrick, 1813, p. 270. See Glamis Estate Improvements, pages ~~10~~[6a] and ~~11~~. following pages.
2. Wight, 1778, Vol. 1, p. 301.

Roger stated was the size most approved in the county, and enclosures larger than that were best suited to their fertile and eminently arable district[1]. (Note the division of about 110 acres of Pitpointie into ten enclosures - Folder, 6). They apparently followed the Fife manner of beginning by liming and taking in their oldest outfield first[2]. This method of laying emphasis on outfields was not unknown in the later period of enclosure, because by improvement of these, parks formed at the extremities of possessions might be let out to graziers, or converted into fields of flax or potatoes. Outfields in this region might be potentially fertile and profitable.

When the plans which show enclosures are studied, there is frequently such variation in the size of enclosures within estates or farms, that it is difficult to believe that the landowner or his surveyor did have any particular plan in mind. It must however be noted that fields of similar size commonly occurred in groups. On Stracathro Estate, the enclosed section of which, in 1792, presented an all-over pattern of enclosures, fields varied in size from three to twenty acres, but there was an obvious grouping of them. (See Folder, 10). Although the most usual field acreage on this estate was from five to eight acres, it may be said that the greater proportion of enclosures conformed to the medium size of ten to fifteen acres. Enclosures were commonly constructed first beside a road or tributary stream and since smallholdings often lined these, their varying acreages

1. Roger, 1794, p. 5; Wight, 1778, p. 352.
2. Wight, 1778, p. 354.

might influence the size of enclosures accordingly. The prevailing trend of the countryside from south-west to north-east had considerable influence on the alignment of enclosures.

The only plan showing the division of a common moor - that of Montreathmont (1819) - which has been examined, shows it apportioned among the surrounding heritors and divided into rectangular strips of different sizes, the strips belonging to a particular landowner not necessarily adjoining his estate.

Works of Demolition and Construction.

A detailed account of works of demolition and construction, including the construction of enclosures, farm buildings and roads, has been compiled from receipts for expenditure on improvements at Glamis Estate, during the years from 1766 to 1771, and may be found in the Appendix - Glamis Estate Improvements, pages ~~8~~ 49 to ~~16~~ 59. One is impressed with the magnitude of operations undertaken, and the thoroughness with which they were achieved.

The large gangs of workmen who were employed on these works, and who by their names were often highlanders, appear to have been versatile, and to have been able to make a good living from their casual labour[1]. One workman, Lauchlan MacKinnon, working intermittently during a period of five months, succeeded in earning as much as £17 sterling, by performing such diverse tasks as casting ditches, setting up peats,

1. Appendix, Glamis Estate Improvements, p. ~~16~~ 59, 66, 67 ~~22~~ and ~~23~~ 68.

levelling ground, erecting enclosures, making pits for planting trees, securing the bottom and banks of Glamis Burn, making a sunk fence and constructing one side of a road. During the next eight months, however, he earned merely £3. 10. by casual labour. Payment might be made by feet or rods covered, or for most unskilled jobs at the rate of 8d. per day.

According to Headrick, proprietors in the eastern parts of Angus began enclosing with ditch, hedge and hedge-row trees in 1730, and when these did not thrive, constructed earthen mounds on which they planted whins[1]. Subsequently stone walls and thorn hedges and ditches were constructed. Various types of enclosure were found on the Strathmore Estate at Glamis, namely stone dykes, ditch, hedge and paling, sunk fences, double ditches, turf fences, and fold dykes for enclosing sheep. The ditch, hedge and paling enclosures of Glamis were favourably commented on by both Headrick and Wight[2], for their thriving condition and solid stone-supported structure. The Glamis receipts record twenty enclosures being made with hedge and ditch by a group of workmen, in the vicinity of Glamis in 1770. They constructed 1728 rods or about 28,500 feet for the sum of £62. 11. 1d. This was at the rate of 6d., 7d., or 8d. per rod, the cost rising to as much as 1/8d. where the ground was rocky, while the cost of making a paling was commonly 6d. per rod. The thorns for the hedges might come from Edinburgh or Castle Lyon, and when planted were manured with marl from Forfar Loch. The

1. Headrick, 1813, p. 268.
2. Ibid., p. 269 and 270; Wight, 1778, Vol. 1, p. 284.

Fig. III.38.

Stone dike on an embankment, that may have replaced hedge and tree enclosure.

cost of stone dykes varied with the accessibility of stones, but a rod of dike might cost as much as 18/4d. for quarrying and leading of stones, construction and coping, whereas the average cost of hedge and ditch was not much more than 8½d. per rod. (See Fig. III,38).

With the exception of lime, iron and wood, the materials used in the building of farmhouses were of local origin, so that prices varied with the accessibility and ease of quarrying the local stone and flag slate - where slate roofs were constructed. The specimen costs shown in the Appendix (page 50, 51) show the disproportionately high cost of lime in shells at 3/- per boll and of the smith's iron materials.

During the eighteenth century there was a gradual transition from the use of turf for cement in house-construction, to the use of clay, and finally, when the condition of road transport permitted it, to the use of lime mortar. With each step forward, concomitant improvements were made, so that there came to be sharp differentiation in the appearance and lay-out of cottages and farm-buildings, in cost of construction and in permanence. It is interesting to note that the two earlier types were still in existence at the time of Headrick's and Robertson's surveys in 1813, and that the oldest buildings referred to were not necessarily the most primitive. It may be observed that the farm houses of Guildshillock on Strathmore estate were constructed of stone and cement, the mason work costing £12, while Will Hostler's tenement had a thatched roof[1].

1. Appendix Glamis Estate Improvements, p. 50 and 51 .

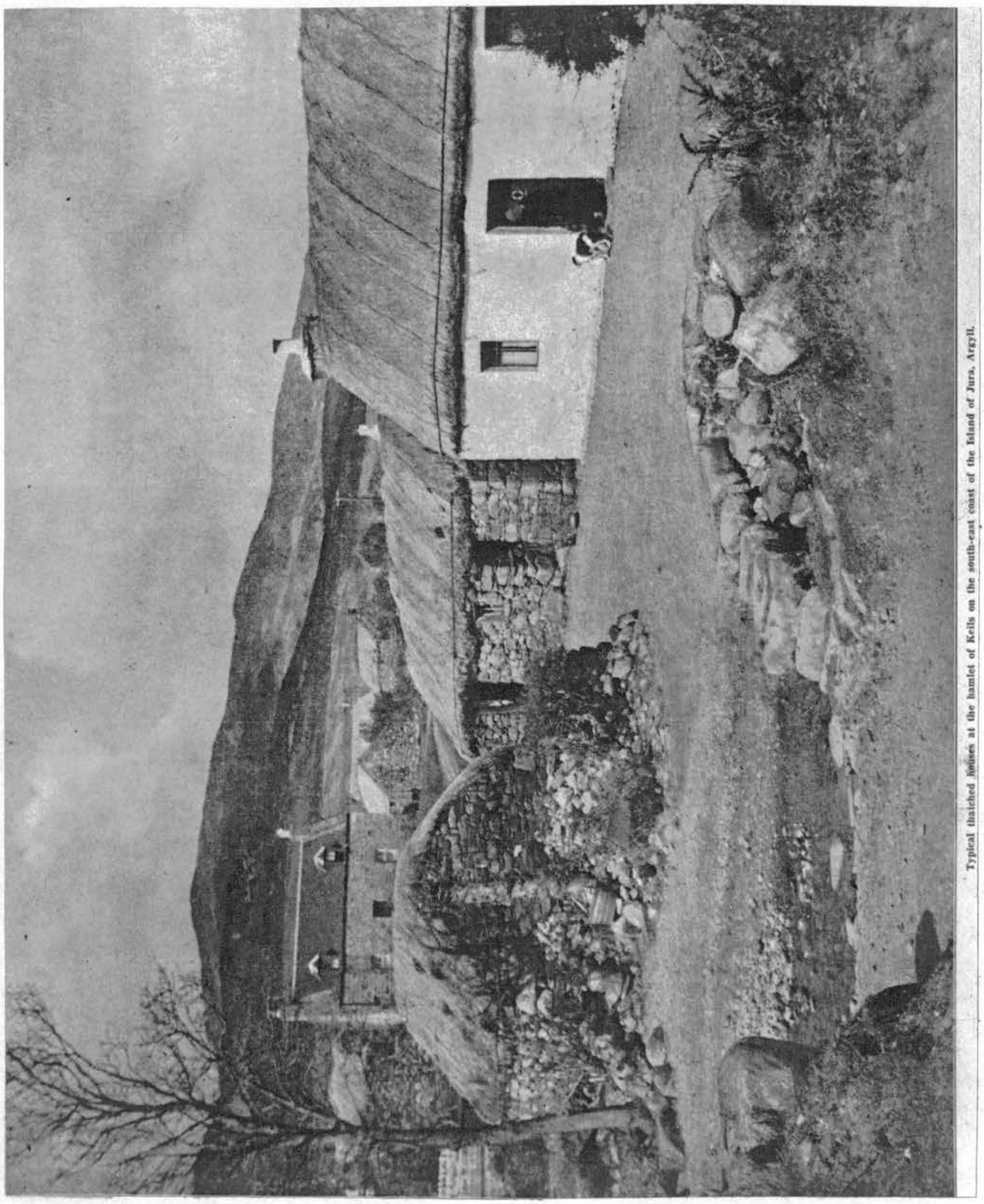


Fig. III.39. Three stages in cottage construction in a Jura hamlet.

Photograph by Douglas Scott, reproduced in the Scotsman, 1953.

The following examples quoted by Headrick and Robertson refer to conditions in 1813, when prices had risen. Headrick declared that cottages were generally built in Angus of stone and clay, with clay floors and thatched roofs, and might cost about £15[1]. When they were floored with broad flags or with wood, had the walls pointed with lime and were roofed with flag slates, they might cost, according to their dimensions, from £30 to £50. (See Fig. III, 42, p137). Robertson described a more primitive kind of cottage as one of the existing types in Kincardineshire[2]. When erected of stone and turf, covered with feal on a layer of brushwood, and the whole surmounted with a thin coating of thatch, tied on with straw ropes, a cottage might cost from £2. 10. to £3. When the only difference was mortar made of stone and clay, instead of stone and turf, the cost might be fifteen or twenty shillings more. When built of solid mason work and covered with a thatched roof of foreign timber and stob-thatch it might cost from £15 to £20. If slates took the place of thatch, the cost might be £20 to £25. (See Fig. III, 39.)

Farm buildings also varied considerably in structure and disposition at the beginning of the nineteenth century. Headrick declared that Angus was not behind its neighbours in the neatness and cleanliness of its buildings, and that the greatest part of farm-houses recently built were substantial and conveniently situated. A farm of a hundred to two hundred acres

1. Headrick, 1813, p. 136.
2. Robertson, 1813, p. 187.

An eighteenth century farmstead of Strathmore, plain but substantial.

normally had a dwelling house of stone and lime, roofed with flags or slate, the offices forming three sides of a square[1]. Small farmers however, and those who had short leases, built and repaired their houses themselves, without employing tradesmen, and thus had to lose much valuable time. All tenants gave some assistance when new buildings or repairs were necessary[2]. Headrick remarked that in different parts of Angus, on some old leases, there were farm-houses that emulated the seats of proprietors, while Robertson thought that the rage for building farm-houses and offices "in a shewy style and of great extent" was sometimes carried too far[3]. Headrick estimated that the value of farm steadings in Angus varied between £20 and £1,000, the value of some of the older steadings at current prices being hardly less than £2,000[4].

S The general appearance of farmsteads and rural dwellings seems to have been in keeping with this progressive region, and the marked contrast afforded by pretentious farmhouses on the most modern lines, and humble, sometimes primitive cottages is what one might expect in a region where were the two extremes - the considerable tenant in possession of a large farm, and the smallholder who might be relatively independent or if attached to a laird, might still be obliged to build his own house. Some of the eighteenth century farmsteads still standing, have a substantial and pleasant appearance, their walls pink-tinted

1. Headrick, 1813, p. 131.
2. Ibid., p. 134.
3. Ibid., p. 131; Robertson, 1813, p. 182.
4. Headrick, 1813, p. 134.

Fig. III.40.

Roadside cottages.

sandstone and their roofs red-tiled. The moss-covered flags of local sandstone that roof so many cottages, give a distinctive and mellow appearance to Strathmore. (See Fig. III,40).

The progress of all kinds of improvements in Strathmore was bound up with the progress of road construction. Although the passing of the Turnpike Act in 1789 must have inaugurated a new era, the improvement of roads had begun before that, and it is of consequence to know the condition of the network of secondary roads as well as the development of the main arterial lines. The minister of Auchterhouse commented that the advantage of the turnpike road from Dundee to Meigle was felt merely if one happened to live near it, because the by-roads were poor[1].

Backed by his resources of capital and labour, Lord Strathmore was paying attention to all kinds of roads on his estate during the 'sixties and 'seventies, whether through roads, private roads or service roads to farms[2]. Where it was considered desirable, new roads were laid out, stones being transferred from old roads, which might be levelled and turned into strip plantations. Through roads were constructed twelve feet broad and four feet deep, while lesser roads were ten feet broad. Stones of various sizes wereused to give a camber, and sunk fences were usually constructed at the edges. Unfortunately nothing is known from documentary sources about road development on other estates at this time, but a number of the plans show new or relatively new roads, that may sometimes, as

1. Old Statistical Account, Vol. 14, p. 525.
2. Appendix, Glamis Estate Improvements, p. ~~14~~ 56 to ~~16~~ 59.

in the case of Clunie (Folder, 8) be seen cutting straight across old possessions. The photostat of Balbegno Estate (Folder, 5) shows a through highway with right-angled bend to conform to enclosure lines. Before the passing of the Turnpike Act few proprietors doubtless could afford to emulate the thorough methods of Lord Strathmore.

In 1789, Forfar County procured an act of Parliament "for converting the statute labour into money, to be levied upon the different classes of the inhabitants, and to be applied, under the direction of trustees, being proprietors of land, or liferenters, to the value of £100 Scots in the county books, to the making and repairing of the roads and bridges within the county"[1]. Some parishes such as most of those in the Grampian districts chose to retain the old system of statute labour in kind and were exempt from the operation of the act[2]. The toll roads were to be 36 feet wide and to have an elevation of not more than one in twenty[3]. The coast road from Perth through Dundee and Montrose, and the road that ran through Strathmore again from Perth were constructed, but more important for Strathmore were the roads that fanned outwards from the ports of Dundee, Arbroath and Montrose, and connected them with Coupar, Kirriemuir, Forfar and Brechin. The Statistical Account for Forfar records that at the time of writing, the turnpike roads to Dundee and to Arbroath were nearly completed,

1. Headrick, 1813, p. 514.
2. Ibid.
3. Roger, 1794, p. 26.

and that the toll charge for one horse and cart per day was 4½d.[1] The tolls did not produce as much money as might have been expected, due to a controversy which began shortly after the passing of the Act, and which led to a number of the old roads being left open and thus providing alternative and free routeways[2]. The "Great Roadists" maintained that the revenue from the converted statute money should be used to keep the toll-roads as well as other roads in repair, while the "Private Roadists" thought that the toll-roads should be financed solely by the income obtained at the toll-bars. A new and more explicit Turnpike Act was passed in 1811. By 1813 turnpike roads extended to about a hundred miles in all in Angus. Headrick remarked that some of the private roads were as good as or even better than parts of the toll-roads, but that some were formed merely by digging ditches at either side, and throwing the spongy clay, called mortar locally, onto the top of the road. Some roads were narrow and "smothered with trees", and others were mere tracts still in their ancient state[3]. According to the Statistical Accounts some of the hillfoot parishes of the north, were backward in this respect.

The Problem of Fertilisers and Fuel.

Due consideration must be given to the bearing of the scarcity of both fertilisers and fuel on the course of

1. Old Statistical Account, Vol. 6, p. 520.
2. Headrick, 1813, p. 518.
3. Ibid., p. 517.

improvements in Strathmore. The time and labour expended in obtaining these and the high prices charged, must have seriously drained the energies and money resources of the people. The distances and lengths to which all classes would go in search of fuel or manure, is indicative of their desperate plight, and perhaps of the emulation aroused by striking successes achieved where fertilisers were available and applied. The extremities to which the lower orders were reduced due to shortage of fuel may be briefly enumerated.

Peat mosses, which had never been widespread in Strathmore, were nearing exhaustion by the end of the eighteenth century, with the consequence that prices were high. In the middle of the century people came from as far as Oathlaw parish to purchase peat from the Strathmore moss grieves[1], and by the end of the century complaint was made in Forfar that the townsfolk were charged as much as 2/6d. for a small cartload of peat (roughly a cubic yard and a half of solid moss) delivered at the door[2]. In Coupar and Stracathro parishes it was stated that coal was actually cheaper than peat, the Coupar minister qualifying this by emphasising the waste of time caused by carriage of coal from Perth or Dundee[3]. The Forfar minister averred that, could the poor man afford the money for coal all at once, he would be cheaper and more comfortable with it[4].

1. Appendix Glamis Estate Improvements, p. ~~24~~. 69 and p 70.
2. Old Statistical Account, Vol. 6., p. 527.
3. Ibid., Vol. 4, p. 214 and Vol. 17, p. 9.
4. Ibid., Vol. 6, p. 521.

Data relative to Sources of Supply and Costs of Coal, Lime & Marl.

(Except where otherwise stated, information taken from Old Statistical Account, Parishes are indicated in brackets, where not obvious).

Coal: A boll of coal was equal usually to 70 or 72 stones, occasionally 56 stones Amsterdam weight. Weight is added, in brackets, where a boll is other than 72 stones. English coal sold here by barrel, six barrels being equivalent to rather more than a boll Scots (Logie and Pert).

Source of Supply	Cost per Boll at Port	Additional Cost due to overland Carriage.
Firth of Forth (mainly Fife)	6/-, 6/6d at Dundee and Arbroath	9/- to 10/6 at Forfar, via Dundee or Arbroath
"	8/- at Perth	8/- at Lethnot, via "
"	8/- - 8/6d at Montrose	12/- at Clunie, via Perth
		12/ or 13/- a cartload (understood to be a boll) at Menmuir, via Montrose.
Newcastle	1/6d per barrel at Montrose (i.e. 9/- for rather more than a Scots Boll).	
Forth.	6/8d. at Barrie on coast.	
Forth and Newcastle	5/- (Amsterdam) from Forth at Longforfan.	

Coal for Limeworks.

Pert Limeworks: Coal from Forth - on spot 3/6d (This apparently an
Freight to Montrose 1/5d (inferior quality -
Cartage 7 miles to quarries. 2/- (small coals)
Boll of 72 stones 6/11 Selling price of lime 1/9d per boll.

Stracathro Limeworks: Coal from Forth to Montrose 8/6d per boll.
Selling price of lime 1/10d per boll.

Limestone: A boll of lime sold by barley or wheat measure, and varied. In Dundee sold by Linlithgow barley measure. (Kinnordy papers).

Local Limestone	Imported Lime	
Pert - 1/9d per boll	Sunderland lime - 2/- per boll	* Wight, Vol. 1 p.325.
Stracathro - 1/10d "	Charlestown in Fife (Lord Elgin's kilns) 1/7½ per boll	* Wight, Vol. 1 p.325.
Guthrie - 1/8d "	Cost of lime in shells purchased at Dundee for Glamis Estate in 1767 was 3/- per boll with 5d for "mettage." Appendix, Glamis Estate Improvements, p. 21.	
Barrie - 1/6d "		

Marl: 1 boll was 8 cubic feet.
Marl was sold from Forfar Loch in 1773 for 5d and 6d per boll. (Appendix Glamis Estate Improvements, p. 7.

At the time of the Statistical Account it was sold at Forfar for 8d per boll, the same price as that sold by George Dempster from Loch of Restennet in 1790. (Roger, 1794, p. 25). At the time of the Old Statistical Account, marl was sold in Airlie parish at 10d per boll and in Auchterhouse at 9d.

It was frequently stated in the parish accounts of the Old Statistical Account, that the nearest peat moss was anything from six to fourteen miles away, and that the poorer people depended mainly on turf and broom. Most of the Commons were so denuded of turf by the latter half of the eighteenth century, that the partition of them amongst surrounding landowners was frequently a matter of indifference to the lower orders, although the division of Montreathmont Moor seems to have caused considerable hardship to a number of cottars[1]. Supplies of broom diminished as enclosure proceeded. The minister of Logie and Pert declared that in his parish, turf could scarcely be got at any price, and that a cartload of broom cost from 1/- to 1/6d.[2]

In some of the parishes of the northern hillfoot region, there was such a dearth of fuel, that it was common for journeys of as much as ten miles to be made to some level hilltop for peat. Such a journey in Clunie parish was said to be fit for killing horses. Where a small farmer had to collect fuel in this manner in summer, and make necessary repairs to his house, as well as perform carriages to the coast for coal, it is surprising that he managed to continue with his ordinary work, let alone improve his land.

The tabulated information on the opposite page (Fig. III, 41) shows the excessive cost of coal, even at the port. The

1. Old Statistical Account, Vol. 6, p. 521.
2. Ibid., Vol. 9, p. 48.

extra cost of coal at Perth was doubtless due to the transfer of coal to small ships, for the journey up the narrowing estuary, whereas the extra cost of from 1/8d to 2/- per boll at Montrose, was due to what was locally deemed an iniquitous tax placed on cargoes of coal passing a small promontory called Cape Redhead. It was thus common for purchasers from districts near Montrose to make the longer journey to Arbroath for coal, in order to avoid the tax. In Menmuir parish apparently the people found this tax such a heavy burden, that they thought it more frugal to burn small coal from Newcastle than what came from the Firth of Forth[1]. The high cost of carriage inland was partially due to the poor condition of roads. The cost of conveying coal for the Pert limeworks from the Forth coalfields is quoted as being 1/5d. freightage to Montrose, and 2/- for cartage for seven miles[2]. It is not surprising that the people of Clunie could not afford to work their local limestone resources.

Although dung, and composts or "mixens" composed of cleanings of ditches, turf fences, rich earth, etc., and perhaps lime on a small scale, had been used for long in Angus, the first considerable venture to exploit limestone was made in 1696 by the brothers Scott, the improvers who owned estates near Montrose (See Folder, 15). There are two outcrops of cornstone belonging to the Upper Old Red Sandstone

1. Old Statistical Account, Vol. 5, p. 149.
2. Ibid., Vol. 9, p. 36.

series near Montrose, one at Hedderwick slightly north of Montrose and the other at Boddin Point on the estate of Dunninald. The Hedderwick beds which contained the finer limestone were producing about 60,000 bolls of shells, and the Boddin beds some 30,000 to 40,000 bolls of shells in 1813[1]. Along the entire coastal belt, local or imported lime was in general use by the seventeen nineties. The only considerable outcrop of limestone occurring inland was discovered in 1780, in the parish of Logie-Pert[2]. (See map showing distribution of fertilisers). This consisted of Conglomerate with Limestone belonging to the Lower Old Red Sandstone series, and was in places as much as twelve feet thick[3]. It is not known how far this lime was carried, but there is some indication that districts west of Forfar used imported lime at a higher price - (See table). Limestone occurring beyond the highland edge was worked in Glenesk and Glenisla[4].

An outcrop of argilliferous limestone, belonging to a series catalogued as "Shale and nodular Limestone Grits" on the ordnance survey geological map, and locally called clay marl, ran parallel to the highland edge and close to it, from near Fettercairn almost to Cortachy Castle. From two hundred to three hundred cartloads of this were required to manure an acre, and therefore in the parish of Lethnot where it was

1. Headrick, 1813, p. 45 and 46.
2. Beds named from old 1" map in Geological Institute, Edinburgh. Headrick, 1813, p. 38.
3. Headrick, 1813, p. 39.
4. Headrick, 1813, p. 15.

exploited, it was used merely in places adjacent to the beds[1].

Whether due to the necessity for importing coal, wood, and lime into the greater part of Strathmore, or to its natural efficacy - and doubtless both causes operated - shell-marl was greatly prized as a fertiliser. According to Headrick, its use was first discovered about 1730, and certainly it was being applied on Glamis Mains Farm in the 'thirties[2]. Roger states that between 1730 and 1736 marl was discovered in the loch of Balgavies and that sometime afterwards the loch was dragged for this[3]. The draining of the Loch of Kinnordie was the first of a number of herculean efforts to expose shell-marl by draining off water from lochs of the Howe of Angus. Evidently highlanders, deprived of the means of subsistence after 1745, worked for 2d. per day on the cutting of a long drain that was to reveal about 300 acres of shell-marl and drain the Loch of Kinnordy completely[4]. In the seventeen nineties Kirriemuir parish was almost completely enclosed and improved, and marl was being sold cheaply and carried as much as fourteen miles[5]. Details about the lowering of the level of Forfar Loch, and the exploitation and sale of the marl, may be seen in the Appendix, Glamis Estate Improvements, pages 4 and 5, 6, and 7. Marl was also obtained from the lochs of Lundie, Logie, Restenneth and Rescobie.

1. Old Statistical Account, Vol. 4, p. 3.
2. Headrick, 1813, p. 406.
3. Roger, 1794, p. 24.
4. Headrick, 1813, p. 27.
5. Old Statistical Account, Vol. 12, p. 19.

Marl was efficacious on medium or light soils, and according to Wight, would produce a large crop of corn or turnips[1], while lime was most effective on heavy clays. Mr. Guthrie of Guthrie Estate near Forfar found that marl had no effect on his heavy clays, and used a compost of earth, lime, marl and dung. On his lighter land he used fifty bolls of marl to an acre, and on the heavier soils 36 bolls of shell-lime to an acre. Fifty to sixty bolls of shell-marl and a similar quantity of lime-shells (yielding 150-180 bolls of slaked lime) were commonly applied to each acre as a first dressing. Smaller quantities were used for subsequent dressings. Although a boll of marl was much cheaper than a boll of lime, the measures were not identical, and their relative efficacy is not known. Headrick maintained that marl was slower in action than lime, but that its effects were thought to be more permanent[2]. Either of these fertilisers might be transported as much as fifteen miles, the means of transport usually being a low cart or wain drawn by two oxen. The load carried was usually six bolls of marl or four or five of shell-lime. Where farms lay outwith this radius, constant efforts were made to find local marl. Labourers might be employed to search for it, and a farmer in Auchterhouse parish dug down a total depth of seventeen feet to be rewarded with supplies of marl which he sold at 9d. per boll[3].

Resourcefulness was not wanting in the application of

1. Wight, 1778, p. 299, Vol. 1.
2. Headrick, 1813, p. 407.
3. Old Statistical Account, Vol. 14, p. 517.

fertilizing agents. Fish garbage was applied at the rate of 2½d. the cartload near Montrose, and whale blubber was used along the coast from Dundee to Montrose, one proprietor of an estate near Forfar transporting large quantities of it from Dundee[1]. In the neighbourhood of towns soot was sometimes applied as a top-dressing, and dung from Dundee was taken by boat to farms on the Carse of Gowrie, while two hundred and fifty cartloads of it were drawn annually to Lundie Estate, some eight miles from the city[2]. Headrick stated that the watering of land as a means of fertilising it, was an old custom in Angus, and quoted two examples of this practice being carried on, one in Tealing parish and the other in Kirriemuir parish[3]. Colonel Kinloch on Logie Estate used the water of a rivulet that rose in the marl loch of Kinnordy and collected filth from Kirriemuir. He conducted a main drain along the highest side of a field, and directed the water from that down the summit of each ridge, letting the water trickle down the sides into the furrows. He had three enclosures fertilised in this manner, which he let to graziers. Mr. "Scrymsoure" of Tealing found that he could grow a succession of crops by this method, one of the crops being wheat, without marl, lime or fallowing. Water in which lint had been steeped was said to have enriched greatly two acres of ground near Brechin[4].

1. Wight, 1778, Vol. 1, p. 364.
2. Ibid., Vol. 1, p. 310; Vol. II, p. 48.
3. Headrick, 1813, p. 339-341.
4. Wight, 1778, Vol. 1, 371.
   Headrick, 1813, p. 417.

The Improvement of Moorland and Mosses.

Such extensive tracts of moorland as still remained unimproved in the latter half of the eighteenth century, were common muirs which might or might not have been divided. Most of this land was eminently improvable, as were also the wetter mosses which commonly consisted of a thin layer of moss developed on alluvium. Such mosses occurred in the vicinity of Glamis where they were drained and reclaimed by companies of labourers[1]. According to Headrick, little waste land remained in the maritime districts of Angus in 1813[2]. Most of these lands he considered worthy rather of tillage than of planting, but many of the old muirs are plantations to-day, and there are tracts of waste land in the Howe of Angus, against which some of the present inhabitants can remember their fathers fighting a losing battle.

The usual practice, after a common muir had been partitioned among landowners, was to plant trees on it. This was done on a number of the moors mentioned in the Statistical Accounts, including the extensive Montreathmont Muir, which comprised some five thousand acres, and which today is mainly woodland and heath. (See ~~Folder, 1~~). Some landowners desired an even greater return from the land, and set about improving it themselves, or let it out to tenants for that purpose. A ten-acre division of the common moor of Dundee was improved

1. Glamis Estate Improvements, p. 5. 46
2. Headrick, 1813, p. 381.

by arduous methods shortly after 1771[1]. Two hundred pounds were spent before the first crop was reached, but after six years the cost of reclaiming the land was met. Another proprietor resident at Craigie near Dundee broke up moor and outfield land with two ploughs, one drawn by six horses and the other drawn by eight oxen. Highlanders trenched a stony field with spades and the use of gunpowder, barrows and quarry tools for £6. 5. per acre. The stones were used to face ditches, cover drains and make part of the road to Dundee[2]. A Mr. Drocket, farmer at Flemington, near Aberlemmo adopted such an uncommon mode of improving a field covered with heath and moss plants, that he was ridiculed by his neighbours[3]. In effect his method was paring and burning, using the ashes obtained from the dried clods of the top soil to fertilise the layer beneath. Where a tenant farmer undertook the task of "improving" waste land, he was commonly given a long lease, and considerable financial aid. An instance is quoted in the Kinnordy Estate papers of a tenant constructing feal dikes three feet high, with ditches three feet deep and six feet wide on a section of moorland, but also being furnished with stone dikes at the expense of the proprietor, on condition that he perform the carriages. Feal dikes with whins planted on them appear to have been constructed frequently during the early stages of moorland enclosure.

1. Wight, 1778, Vol. 1, p. 320.
2. Ibid., p. 314.
3. Headrick, 1813, p. 383.

From the point of view of the landowner and perhaps of the tenant also, the most profitable way of improving moorland was to let patches of waste land to part-time tradesmen either on long leases or as perpetual feus. Where land had previously been planted with trees, it was common for the smallholders to tear out the trees by the roots, and reduce the roots to ashes[1]. They trenched the land and ploughed it, applying dung, marl or lime. Frequently feus were near some town or village and fertilisers might be purchased near at hand. Cereals, potatoes, turnips and other vegetables were subsequently grown. These lots of land varied from less than one acre to five or six acres, usually held in leases of a hundred years, or in perpetuity, at an average rent of £2 per acre[2]. George Dempster who laid out the model village of Letham in 1788 on a moorland ridge, obtained a yield of £200 per annum from the inhabitants in place of the £5 that he previously received[3].

Wet mosses were drained by boundary drains which were open ditches generally about four feet wide at the top and from three to four feet in depth. Sometimes a facing was constructed and thorns or broom planted on top. Concealed or covered drains were constructed of flagstones, and known as box-drains[4].

1. Headrick, 1813, p. 384.
2. Ibid., p. 211.
3. Ibid., p. 138.
4. Ibid., p. 392.

Afforestation.

John Ainslie's map of the county of Angus, dated 1792, shows about sixteen thousand acres of plantation in the county. Large compact plantations might be seen on the thinner soils of the northern hillfoot region, covering the south-facing slopes of the Sidlaws, especially where they overlook the Carse of Gowrie, and on erstwhile commons. Elsewhere woodland occurred rather in the same fashion as it does to-day, in the form of parkland, small irregular plantations, wooded knowes, shelter belts and tree strips fringing roads. Even in the backward parish of Clunie, tenants were being persuaded to plant shelter-belts by the end of the eighteenth century[1]. Trees favoured were firs and larches, and also common hardwood trees.

According to Wight, Lord Strathmore planted 130,000 trees "besides firs without number" on his estate during the two years previous to 1778[2]. He certainly planted an extraordinary variety of trees in plantations, clumps and strips with customary thoroughness. Details about types of trees and their costs, the manner of planting them and safeguarding them with fences may be found in the Appendix, Glamis Estate Improvements, pages ~~17~~ 60 and ~~18~~ 61.

The Forfar minister, commenting on thriving plantations some twenty to thirty years old, within the parish, stated that

1. Old Statistical Account, Vol. 9, p. 275.
2. Wight, 1778, Vol. 1, p. 286.

it was generally supposed that an acre of thriving firs thirty years old, would bring the proprietor at least twenty shillings clear profit for every year of its growth[1]. Headrick stated that the thinnings customarily defrayed all the expense of planting and enclosing the ground, with interest. There was naturally a great demand for firewood, and moreover the tallest and straightest sticks were exported in the early nineteenth century to serve as hop-poles in southern England[2]. Sometimes highland cattle were wintered and fed in plantations that were twelve or more years old[3].

The Improvement of Rigs.

The straightening and levelling of the old high rigs and consequent elimination of broad weed-ridden baulks, must have increased considerably the amount of productive land. In the Carse of Gowrie before improvements began, the crowns only of the ridges were arable, and at least half of the area covered by ridge and baulk was inferior pasture, divot-land for house construction, or in winter, a quagmire[4].

On Glamis Estate, high crooked ridges were levelled, and the old crowns might be restored by application of a large compost dunghill, of rubbish and turf of old houses, mixed with hot dung. This was laid on in autumn and ploughed in

1. Old Statistical Account, Vol. 6., p. 530.
2. Headrick, 1813, p. 377.
3. Ibid., p. 376.
4. Old Statistical Account, Vol. 19, p. 499.

upon the crowns[1]. One field of fourteen acres was given seven ploughings, the ridges were thoroughly levelled, and fifty bolls of marl were laid on each acre. It was then ridged for turnips, the ridges being four feet wide, and dung was laid on the furrows which were covered with the plough. It was turnip-drilled and horse-hoed twice, and after the crop was lifted, each pair of ridges was gathered into one for a crop of barley and grass-seeds[2]. Great care was taken to lay the ridges in the most commodious direction, and make them run parallel to one side at least of each enclosure[3].

One instance is recorded in the Appendix, Glamis Estate Improvements, (page 49) of a labourer being paid at the rate of 2½d. per rood for levelling high ridges, but the task might be more expensive, indeed prohibitive, where the soil was heavy clay. The cost of straightening ridges and draining the clay soil on the Carse of Gowrie, might be as much as £6 per acre for labourers alone, exclusive of the cost of carts, horses and farm-servants. A number of proprietors contented themselves with draining, removing baulks and levelling ridges, and left them in the old crooked lines[4]. The land was still laid out in broad ridges in Headrick's time, and according to him, and to earlier references in family papers and statistical accounts, the average breadth of a ridge was from sixteen to twenty feet,

1. Wight, 1778, Vol. 1, p. 280.
2. Ibid., p. 278.
3. Ibid., p. 285.
4. Old Statistical Account, Vol. 19, pp. 499 and 504.

while the length might be nine hundred or a thousand feet[1].

The Changing Plough and Team.

The relative progressiveness of any particular district of Angus as regards the adoption of the principles of the Agricultural Revolution, cannot be estimated conclusively by the period when Small's plough or its equivalent was introduced and came into general use. So far was it from the case that the new plough first was employed in the low-lying coastal districts, that when it was coming into general use in Kirriemuir and Edzell parishes, it was merely being introduced into the country districts of Dundee parish[2]. The explanation of this appears to lie in the preference shown by many farmers for what was termed the new Scots plough, and which was so improved a version of the old plough that it usually was worked by one man and two horses. The Longforgan farmers referred to it as a mongrel, and it appears to have been intermediate in weight between the old Scots plough and Small's plough, being used frequently on moorland or stiff soils. Roger described it as having metal boards and costing from £1. 15. to £2. 2. Od. He said that Small's plough was often tried, and succeeded on lands which were level and free from encumbrance, whereas the old Scots plough was a rarity except

1. Headrick, 1813, p. 274.
2. Old Statistical Accounts, Vol. 12, p. 192; Vol. 10, p. 106; Vol. 8, p. 198.

in Glenesk or Glenisla[1]. According to the Old Statistical Account, the old plough was still in use on some of the farms of the fertile district near Montrose at the end of the eighteenth century, and in the 'seventies, Wight commented on its use by some who were otherwise admirable farmers[2]. English makes of plough, such as the Norfolk wheel plough or the Rotherham chain plough, were used on a few estates where the proprietor was familiar with English methods, or as was the case with the Lord Privy Seal, the Honourable James Stewart Mackenzie, where he employed an English overseer[3].

Oxen were fast giving way to horses as draught animals by the latter part of the eighteenth century, in spite of the declarations in favour of oxen made by Lord Kames and other theorists. Oxen might be more easily and cheaply maintained than horses, but in a region such as this, where long carriages were constantly being made, the horse was the stronger and faster animal. "Lord Kames has few converts to oxen here" said Roger, and yet oxen continued for long to be used with horses on large estates such as Glamis[4]. Two horses and one man was the most usual team by the end of the century, although four horses might be used, as one farmer explained, for deeper ploughings of fallow land, stirring bear land, and other stiff soil[5].

1. Roger, 1794, p. 17.
2. Wight, 1778, p. 347 and 372.
3. Ibid., Vol. 1, p. 270.
4. Roger, 1794, p. 17.
5. Wight, 1778, Vol. 1. p. 357.

The New Husbandry.

We have seen that the actual process of enclosure and preparation of the new fields was controlled by such factors as condition of the soil, availability of materials, policy of the landowner and finance. The form which the new system of farming was to take, and its particular bias, were alike influenced by local geographical conditions, and human and economic factors. Although wheat had for long been grown on the low carse grounds of Angus and the Mearns, there was for instance, considerable prejudice against it in the Howe of Angus, even in districts which, with fertilised soils, were eminently suited to its growth. Some thought that their soils were too light for the crop, and others maintained that it took too much out of the soil, while on Glamis Estate, in the 'seventies, its growth was prohibited. In Coupar parish the difficulty of obtaining manure was given as the reason for the inconsiderable amounts of wheat grown in the seventeen-nineties[1]. At the same time Kingoldrum parish which though mostly above five hundred feet in elevation was well endowed with marl, was exporting wheat to Dundee[2]. The eventual adoption of wheat was inevitable on this low-lying region so noted for its export of cereals, and by 1813, Headrick declared that were Mr. Pennant to repeat his tour of 1775, rather than observe the diminution of wheat production north of Dundee, he would comment

1. Old Statistical Account, Vol. 17, p. 3.
2. Old Statistical Account, Vol. 9, p. 132.

on its appearance even on eminently unsuitable soils[1].

By the end of the eighteenth century, turnips, potatoes, clover and other grasses were usual and valued crops in almost every parish, and had a recognised place in the rotation. Rotations adopted varied from district to district, and with increasing altitude there was usually a longer period under grass. Roger in his account of Forfar, 1794, quoted one rotation which he stated, was general from Dundee to the River Lunan, and in the low and western parts of Strathmore[2]. The same rotation is mentioned in the parish accounts of Montrose and Longforgan, and is as follows[3]:

(1)

First Year	-	Fallow (lime shells dug in, in Maryton parish).
Second "	-	Wheat.
Third "	-	Pease and Beans.
Fourth "	-	Barley with grass-seeds (generally red clover in Maryton parish).
Fifth "	-	Green-feeding or Hay.
Sixth "	-	Oats.

(2) Rotation used in the lower lands of the Howe of Angus.

Kirkden Parish[4]

First Year	-	Oats.
Second "	-	Turnips, Pease, Potatoes or Lint.
Third "	-	Barley and Grass-seeds.
Fourth "	-	Grass.
Fifth "	-	Grass.
Sixth "	-	Grass.

1. Headrick, 1813, p. 296.
2. Roger, 1794, p. 9.
3. Old Statistical Accounts, Vol. 9, p. 403; Vol. 19, p. 520.
4. Ibid., Vol. 2, p. 512.

(3) Rotation used near the Highland Edge

Kirriemuir Parish[1].

First Year - Oats or Flax after ley.
Second " - Turnips or Potatoes.
Third " - Oats.
Fourth " - Barley with Grass-seeds.
Fifth " - Hay.
Sixth " - Pasture.
Seventh " - Pasture.
Eighth " - Pasture (Some farmers pastured for 5 years).

Where farmers were permitted to choose, there would doubtless be considerable diversity in the rotations selected to suit conditions peculiar to their respective farms, and their objects in view. It was however common for the landlord, in the interests of efficient farming and the safeguarding of the condition of the farm towards the end of a lease, to prescribe a fixed rotation, and bind the tenant by clauses in the lease to observe certain regulations. It was for instance customary for farmers in Strathmore to be obliged to have at least half of the farmland in grass, and to sell neither dung nor fodder, except perhaps hay and wheat-straw for thatching. Even the tacksmen of small pendicles near Forfar had always part of their possessions in grass, turnips, or potatoes[2]. In the early days of applying marl to land, over-application of marl had been found to have disastrous results, producing barrenness rather than fertility[3]. To regulate the use of this, and to

1. Old Statistical Account, Vol. 12, p. 187.
2. Old Statistical Account, Vol. 6, p. 531.
3. Wight, 1778, Vol. 5, Survey VIII, p.,171.

prevent indiscriminate cropping after its application, Lord Strathmore differentiated between infield and outfield land, and gave detailed instructions of the procedure to be observed on each[1]. Another common stipulation was that a tenant should be resident. This contributed, within a matter of twenty years towards the transformation of the "Carmyllie platform" (altitude between five hundred and six hundred feet, where the Sidlaws decline eastwards, and partially covered with morainic deposits) on which the Guynd Estate is situated, from a summer grazing ground for the cattle of neighbouring farmers, to a district sufficiently improved to produce four times the previous quantity of grain[2].

The binding of a tenant to rigid observance of a rotation that was not suited to the particular conditions of his farm, must have been frustrating to the tenant as well as detrimental to the laird's interests. Headrick pointed out the evil consequences of such restrictive clauses having been inserted in long leases of about fifty years' duration, which were commonly given in Angus during the early stages of the enclosure movement. In his day, tenants were having to persist with rotations and practices that were no longer approved. Some landlords apparently were wise enough to consider these restrictions "more honoured in the breach than in the observance", while on one large estate, advisers were appointed

1. Wight, 1778, Vol. 1, p. 276.
2. Southern Forfarshire - Blanche Hosgood, Scottish Geographical Magazine, Vol. 35, pp. 17 and 21; Old Statistical Account, Vol. 1, p. 436.

to go round the farms and recommend new rotations or variations which might be more beneficial than those prescribed in the leases. "But," said Headrick, "the tenants would not swallow the prescriptions of these land doctors," and proceeded to adopt rotations more suitable than any suggested to them[1].

Throughout the Howe of Angus at this time, and even on the coastal carse lands where arable farming predominated, there was an interest in mixed farming, and if the glens be excepted, there was such widespread export of cereals and livestock even from remote parishes, as to bespeak establishment of this and a high order of agricultural prosperity, over a considerable period of time. From the relatively backward parish of Menmuir we hear, for instance, of a corn mill sending annually four hundred bolls of what was called "pot-barley" to the London market, while wheat, barley and oats were exported from the ports to the northern and western counties of Scotland, to Glasgow and Leith, London and even Amsterdam[2]. Black cattle were annually sent to Falkirk and to English markets, and great emphasis was laid on the rearing and fattening of them.

On the carse grounds near Montrose where cereal production predominated, black cattle were reared on the lighter soils, while on the heavier soils, farmers commonly took in cattle in autumn or kept cattle from graziers in their straw yards[3]. The

1. Headrick, 1813, pp. 285 and 286.
2. Old Statistical Account, Vol. 5, p. 155. The Dundee District, J. Day, p. 60; Statistical Account, St. Vigeans, Barrie.
3. Old Statistical Account, Vol. 9, p. 399.

Aberlemno parish in Strathmore, which frequently exported considerable amounts of grain, yet concentrated chiefly on bringing up black cattle[1]. The parishes of Lethnot and Menmuir sent fat cattle to market, and most of the hillfoot parishes exported quantities of butter and cheese. Two creamers, resident in Kirkden parish bought dairy produce - butter, cheese and eggs - for the Dundee market[2]. The fattening of cattle for graziers gave such high financial returns that farmers in Kinnettles parish rarely reared cattle on their best farms, preferring to buy them in for winter fattening. Some took as many as thirty cattle, and used pasture, hay foggage and turnips for fattening[3]. The farmers of Airlie parish "found their account in fattening cattle", and might feed from a hundred and fifty to two hundred on turnips in a season, and have as many as five hundred store cattle at one time[4]. In Glamis parish where numbers of fine cattle were fed, one dealer might be possessed of £10,000 worth at a time. Enclosed pasture land was commonly let at from thirty shillings to fifty shillings per acre in the seventeen-nineties, while an acre of good grass near Dundee drew as much as from £7 to £12[5]. This compared favourably with the average rent of between twenty and thirty-five shillings per acre of enclosed arable land.

1. Old Statistical Account, Vol. 4, p. 49.
2. Ibid., Vol. 2, p. 508.
3. Ibid., Vol. 9, pp. 197 and 211.
4. Ibid., Vol. 2, p. 209.
5. Ibid., Vol. 8, p. 198.

Occasional reference is made to the rearing of calves, but there was little production of veal. It is of interest to note Headrick's explanation of this: "The feeding of veal is not practised here with the skill and address with which it is carried on at Strathavon, and in the Middle Ward of Lanarkshire. Indeed our citizens in towns have not such delicate palates as those in the west of Scotland, and generally prefer the cheapest article they can find. Hence butchers will not give an adequate price for calves highly fed."[1]

As enclosure proceeded in Strathmore sheep became conspicuously creatures of the glens, especially glen Clova, which might have as many as eight thousand[2]. Numbers of them might however be found on infertile pastures such as those of Barrie, or on estates such as Lundie Estate where the proprietor fattened ewes and reared lambs, partly for the manure they provided.[3] They were kept from Easter till Christmas, and then sold. Mr. Watson of Turin, near Forfar, told Wight that he stocked an outfield with sheep, and made a success of the venture until others imitated and over-stocked the market[4]. After the enclosure of policies was completed, sheep commonly began to reappear on these. Smearing was not practised in Strathmore.

1. Headrick, 1813, p. 440.
2. Old Statistical Account, Vol. 10, p. 570.
3. Wight, 1778, Vol. 1, p. 310.
4. Ibid, p. 334.

There is considerable significance in the fact that large scale production of wheat was held to be incompatible with extensive production of flax. Wight in his discussion of Castle Lyon Estate observed that it was difficult to raise much wheat and also flax in a proper and profitable manner, and this sentiment was echoed by the writer of Maryton parish statistical account, who stated that flax was no longer grown in the parish, being found unprofitable[1]. Certainly the greatest quantities were grown in Strathmore, where the crop was anything but unprofitable. Apparently premiums were given by the Trustees for Manufactures, to encourage flax production, and in 1780 there were no fewer than fifteen hundred acres in Strathmore and other parts of the county under flax[2]. A field of fifteen acres of lint, on the farm of Hatton of Eassie, was let out to the country people at £3 the acre (c. 1778), but the rent varied and might be as high as £11 or £12[3]. Stracathro parish account records that an acre of lint sold on the foot brought from £10 to £14, and the average amount grown by the farmers in Edzell parish is given as sixteen acres[4]. It may be supposed that in districts where wheat was not grown, there might be some correlation between amounts of flax grown and numbers of linen-workers.

Potatoes and turnips might both be profitable crops. It was common near towns or villages to let off fields to tradesmen

1. Wight, 1778, Vol. 2, p. 63; Old Statistical Account, Vol. 9, p. 403.
2. Wight, 1778, Vol. 5., Survey VIII, p. 25.
3. Ibid., Vol. I, p. 297, and Vol. 2, p. 70.
4. Old Statistical Account, Vol. 4, p. 210 and Vol. 10, p. 105.

who planted and tilled potatoes, and paid considerable rents, which in the case of Dundee manufacturers might be as high as £4 to £6 per acre[1]. Most of the smallholders grew potatoes, and they were the mainstay of the poor. An acre of good turnips might also fetch a high price, and near Dundee this was as high as from £7 to £10[2].

S It may thus be said that by the end of the eighteenth century, Strathmore had adopted the principles of the new husbandry and was making good use of its natural advantages, profiting also by its dense population of tradesmen, partially dependent on the soil, and the constant traffic of graziers and their cattle. The prosperity which we see to-day was already apparent.

The New Disposition of Farms, and Changes in the Distribution of Population.

With satisfaction, the narrator of Clunie parish account declared that commonties and runrigs had been done away with, that farms were beginning to be reduced to some form, and marches to be straightened. Each man was beginning to know his own, and to have it in his power to improve it[3]. Many farmers of Strathmore had known their own for some time, but now that the countryside was being set in a more permanent mould, inevitably there must have been oscillation, some gaining and others losing. In some districts, more conspicuously

1. Old Statistical Account, Vol. 8, p. 198.
2. Ibid., p. 198.
3. Ibid., Vol. 9, p. 246.

than in others, farms were frequently united or enlarged by the absorption of small possessions, and there were also instances of their being divided. This is not surprising when it is recalled that many of the pre-enclosure farms were either very small or very large. It must therefore be borne in mind that the elimination of tenants may have been not so much the result of deliberate policy, as the unfortunate consequence of a genuine desire to attain the most economic size of farm. Few instances are recorded of landlords razing cottages in order to acquire additional ground, and little adverse comment was made about the treatment of tenants during the enclosure movement. The complex economy of the region makes it difficult to make an estimate of the effects of enclosure on the distribution of population, because many of the tenant-tradesmen were attracted to the vicinity of towns or, to the coast, for reasons not directly connected with enclosure. A misleading impression may moreover be given by the parish population statistics of the Old Statistical Account, due to the fact that while improvements were being effected, there was often a temporary influx of labourers, most of whom were highlanders.

If the map showing Progress of Improvements be superimposed on that showing Population Change between 1755 and 1790-98 (Folder - ~~16~~ and 17) it may be seen that a high proportion of enclosure did not always correspond with a decrease in population. Farms in Aberlemno parish had not

diminished in number by the end of the eighteenth century, and Glamis parish showed an increase in population, although in the adjacent parishes of Airlie and Kinnettles, the junction of farms was said to have caused seventy houses to be uninhabited or pulled down in the former, and thirty-seven cottages to be razed or become ruinous in the latter. Indeed in the parish of Kinnettles towards the end of the eighteenth century, three cottar towns were razed and about three hundred people driven from their homes[1]. (The total increase of population shown for Kinnettles was accounted for by the opening of a new mill for spinning flax[2]). A conspicuous block of parishes, including Meigle, Kettins and Newtyle, whose fertile and relatively level lands were early enclosed, records decreasing population. This was attributed to the development of the linen industry and the "monopolising" of farms, causing the withdrawal of large numbers of small tenants and tradespeople, many of whom doubtless contributed to the tripling of the inhabitants of Coupar within the latter half of the eighteenth century[3]. The 2½ inch scale tracing of Hallyburton Estate near Coupar, shows that a number of ferm-touns and even villages as well as single dwellings, have disappeared since 1784 (See Folder, 2). In the parish of Logie and Pert, the "monopolising" of farms involved sometimes the

1. Old Statistical Account, Vol. 2, p. 211, Vol. 9, p.214, and Vol. 4, p. 49.
2. New Statistical Account, Vol. 11, p. 218-219.
3. According to James Handley, this spinning-mill, erected in 1790, was the first to be erected in Scotland. "Scottish Farming in the Eighteenth Century, 1953, p.55.
4. Old Statistical Account, Vol. 17, p. 5.

amalgamation of more than two farms, but even after this had been effected, five farmers only, paid rent of as much as £100, and most of the rest paid less than £50[1 & 2]. Within fourteen years, twelve farms became six in Lethnot parish, and even so, all but two farms were less than eighty acres in size, the larger of the two being a hundred and sixty acres (See ~~Fig. III, p.~~ Folder-3. [3]). A few instances are mentioned of increased rents being obtained after division of a farm, and subsequent improvement. In Stracathro parish, where at least one farm was as large as four hundred acres, the Statistical Account records that a farm which in 1751 gave less than £20 after division gave a total of £130.

The process of uniting and subdividing farms was still going on in the early nineteenth century, but according to Headrick, the vast majority of holdings in the county of Angus were small. His table of rents may be quoted[4].

1808

Number of farms whose rent is under £20 per annum	1574
Number of " " " " from £20 to £50 "	565
Number of " " " " " £50 to £100 "	682
Number of " " " " " £100 to £300 "	315
Number of " " " " above £300 "	86
Total number of farms	3,222

1. Old Statistical Account, Vol. 9, p. 39.
2. Most of the parish was enclosed, and it is presumed that rent would average about twenty shillings per acre.
3. Old Statistical Account, Vol. 4, pp. 6 and 10.
4. Headrick, 1813, p. 215.

When the piecemeal condition of much of the pre-enclosure landscape is recollected, it seems surprising that so many small farms preserved their entities throughout the enclosure era. From the point of view of the new systems of husbandry and the opening up of the countryside by road construction, the interjection of strings of crofts and their lands with farms in Alyth parish, the untidy and premature crystallisation of the smallholdings in Balbegno Estate, and the remote and scattered crofts of Panmure Estate, must have been inconvenient to greater and lesser tenants alike. Complete reorganisation must often have been necessary.

When adjustments were made to lands, it was natural for the smallholder who was merely a part-time farmer, to suffer. Examples of small tenants losing part of their acres were found amongst the Glamis papers[1]. The tenant-weaver however would prefer to have his croft by the roadside, and we have seen that rows of these crofts were laid out along roadsides, by the Strathmore factors, proprietor of Lour Estate, and others. Indeed weaver tenants were financial assets, and it paid to give them a few acres in perpetual feu. They gave good rents for their acres and might still at the end of the century, be required to give some spindles of yarn yearly.

One of the Scotts of Dunninald told Wight that ploughing with one man and two horses was the most effectual saving of expense achieved during the latter half of the eighteenth

1. Appendix Glamis Estate Development, ~~pp.~~ p 38. ~~25 and 26.~~

century[1]. Certainly many of the cottagers proper who were full-time servants of farmer or laird, found that they were no longer required. The value of the cottager and relative expense of maintaining him, as compared with the servant resident in the house or the day-labourer, was a controversial subject in Strathmore. Some maintained that the hired servants were saucy, of a wandering disposition, or more expensive to maintain since their salary was paid entirely in money. Cottagers they thought, were more dependable, and with the security of cottage and yard, more contented. On the other hand female servants might be employed spinning yarn as well as serving the family, and hired servants as a rule were less hampered by a large family or ground of their own to maintain. It was said that farmers of Kinnettles parish, who had been accustomed to have cottagers, began to dispense with them, raze the cottages, and frown on their hired servants marrying[2]. Cottagers to farmers commonly fared more hardly than those who served the laird. When making reference to the meanness of many of the cottages of Auchterhouse parish, the narrator of the Statistical account declared that the cottager was happy who could hold of the landlord. "Few tenants prove gentle masters[3].

The farmers of Lethnot wished to lessen the numbers of subtenants because they found it inconvenient to lead fuel to

1. Wight, 1778, Vol. 1, p. 357.
2. Old Statistical Account, Vol. 9, p. 202.
3. Ibid., Vol. 14, p. 527.

them, and Headrick declared that many families emigrated voluntarily from the northern parts of Angus, to towns and villages along the coast, because of the fuel problem[1].

The spectacular extension of the linen industry which took place in Angus and Kincardineshire during the eighteenth century, owed its impetus to the discovery made in Arbroath in 1738, that flax of a quality inferior to that which was usually brought to market, could be made into coarse cloth, similar to a type made in Germany. Shortly after 1746 "osnaburgs" or "osnaburghs" were being manufactured in Brechin and Forfar, and about the same time, the manufacture of brown linen was introduced into Kirriemuir[2]. Soon every town and village of any consequence was manufacturing coarse linen fabrics for export, and in many parishes there was hardly a house where one or more women were not employed spinning yarn for the osnaburgh weavers. Weavers were interspersed at small distances all over the country, and they gave out flax and paid the current price for spinning. In the 'nineties women might make three shillings or three shillings and sixpence per week, spinning with both hands. By the 'seventies linen had become our staple Scottish industry, and Angus had the leading place.

As the linen industry developed in the towns and as they increased in amenities, spinners and weavers flocked to settle on the outskirts of them. There were between four and five

1. Old Statistical Account, Vol. 4, p. 6; Headrick, 1813, p. 507.
2. Forfarshire, Cambridge County Geographies, p. 62.

hundred looms in Forfar alone at the end of the century, and the town, with a population of 3,452, had increased by a thousand since 1781. Wages for weavers were high. A good man might make ten dozen yards of osnaburg material in nearly as many days, and thereby earn from fifteen shillings to a pound. Retaining an instinctive desire for a piece of ground, the tradesmen were prepared and able to pay a high rent for a share in the burgh acres. Forfar acres had been rented at £10 Scots each in 1745, but within fifty years rose to between £2.10 and £3 sterling each, some of the acres near the centre of the town being twice as much - "but" said the narrator of Forfar Statistical Account, "one must have a cow for his family, and another a horse to carry him to a distant market or bring goods from a seaport, and he takes a piece of ground near him, and pays a premium for his convenience[1]". Similar development took place round every town, of Strathmore, and in some cases towns were laid out for the linen workers.

Dempster's planned village of Letham with its neat rows of well-constructed cottages, each standing in its own feu, its two spinning mills, two corn-mills, a lint mill, a stamp office, and a weekly market for yarn and unbleached linens, doubtless gave inspiration to other enterprising landlords. Two years before the erection of Letham, however, in 1786, a plan was drawn of an extension to be made to Alyth[2]. This was

1. Old Statistical Account, Vol. 6, pp. 514 to 518 and 533.
2. Alyth Town, 1786. Estate Office, Corłachy.

laid out in rectangular blocks, each house having a feu of about a seventh of an acre, and from the irregular sizes of the buildings arranged round each block, it appears that they were laid out with houses and sheds, suitable for smallholding tradesmen.

The Improvement of the Land, and the Standard of Living.

Of the many factors taken into account when farm rents were fixed, that which was most responsible for the tremendous increase in rents between 1750 and 1800 was the improved system of agriculture which increased productivity. In this region particularly the achievement of this implied an improved road system, and the consequent availability of lime or other manures, as well as intelligent use of new crops. Thus the most reliable criterion of the progress of improvements in a particular district, is the condition of rents. In the seventeen nineties the rent of unenclosed and unimproved land varied from about 2/6d. to 10/- per acre, whereas in most parishes the average rent of enclosed land was greater than fifteen shillings, commonly for arable land between twenty and thirty shillings per acre. Thus, although improved land might yield a rent so low as ten shillings an acre where a lease of fifty years was held, there was normally clear differentiation between land which was enclosed and improved, and land which was unimproved or in the early stages of improvement. This criterion

was used in the compilation of the map showing progress of improvements. (Folder, 17). A five-fold or six-fold increase in rent was frequently quoted in statistical accounts, the comment being made that this was still considered a good bargain.

It must be remembered that there had been considerable depreciation in the value of money during the latter half of the eighteenth century, and wages and the cost of living had risen accordingly, but there also had been a considerable raising of the standard of living. This was not however evenly achieved throughout Strathmore, nor amongst the various classes beyond the policy walls. In backward or less fertile districts the poorer people still lived in smoky cribs or cottages that did not as yet know cement, might wear home-produced garments and have pottage and milk in lieu of tea, sugar and butter, whereas in the more fertile and progressive districts the lower orders had well constructed houses, wore fine cloth and partook of wheaten bread, meat, tea, sugar and other delicacies of the time. The extremely high wages which workmen and weavers could earn were disproportionate compared with those of the lesser farmers and even some of the professional classes. In the 'nineties a ploughman commonly earned a total of £12 per annum, a cottager, with perquisites included, rather more, whereas a casual labourer working spasmodically on "improvements" might earn as much or more by this means and supplement his income by part-time spinning or weaving, or by working a few acres of

ground. It was said by a parish minister that the inferior ranks were invading the higher orders, nor scrupling to do so, and it is not surprising that those who found themselves with considerable purchasing power should have been attracted to the towns[1]. Nine carriers proceeding from Kirriemuir to Dundee, twice or thrice per week, returned laden with sugar, tea, porter, rum, and all kinds of merchant goods[2]. To this thriving town and others in like condition came not only linen workers, but also highland emigrants leaving glens that had grown chill and unfriendly, and young people from upland parishes come to seek their fortunes. Some of the upland parishes which in mid-eighteenth century had been overloaded with cottars, were complaining of a dearth of farm servants by the end of the century. Many of these were attracted by the higher wages paid in the more progressive districts.

S Thus we find a restless population in Strathmore, some uprooted from areas where improvements were being effected, others attracted towards them, some moving towards the villages and towns, others seeking the advantages of living by the coast. A new and unequal distribution of population was being effected, and the differentiation between farmer and industrialist, countryman and townsman becoming more marked.

Agricultural Inertia.

The dynamic character of the pre-enclosure landscape and

1. Old Statistical Account, Kinnettles, Vol. 9, p. 210.
2. Ibid., Vol. 12, p. 193.

the absence of any local or regional homogeneity in progress made before the improvements era, have been emphasised. The sweeping changes of the Agricultural Revolution did not achieve a completely new order, but rather gave accentuation to the incongruities of old customs that survived in the midst of more enlightened ways, and to inconsistencies prevalent in regions whose progress by the end of the eighteenth century, was only partial.

In rentals of the last quarter of the eighteenth century payments in merks and Scots pounds appeared beside payments in sterling: payments of most casualties had been commuted to money, yet barley might be contributed under the old-fashioned heading of "bear", along with bolls of wheat and numbers of Kane hens. As previously mentioned, carriages were continued well into the nineteenth century, and thirlage was still common at the end of the eighteenth century.

Even in 1813, "in the lower and best cultivated districts, a few examples still remain, of run-rig farms being possessed by the inhabitants of a straggling village, while their cattle graze promiscuously on a contiguous tract of waste land[1]." Headrick stated also that in most parts of the county the intermixture of farmers' houses and offices continued more or less, though the land had been divided, even enclosed, and runrig abolished[2]. It is difficult to believe that this existed in other than a lesser degree. He referred to townships existing in his time as farms, occupied by two or more farmers,

1. Headrick, 1813, p. 380.
2. Ibid., 1813, p. 129.

Fig. III.42.

Smallholdings old and new, on opposite sides of a road in Strathmore.

Copy.
Due to shortage of farm servants in Angus, 48 rural houses and seven bothies are tenantless.

Fig. III. 43. Newspaper cutting, January, 1953.

in common or in separate lots, who resided in a straggling hamlet or village, and commonly had a labourer for each plough who occupied a cottage in the same town.[1] If such remnants of runrig were still to be found in the lower and best cultivated parts during the early nineteenth century, then the achievement of universal improvement was certainly a lengthy process, and this furnishes evidence of the impossibility of calculating the human factor.

Modern Strathmore.

Strathmore today is a land both pleasant and prosperous. Smallholders and cottagers are still much in evidence and have an air of sturdy independence. Those who live in the fruit districts can make a good living from raspberries, currants and other small fruits, and pay high rents, but according to landowners and factors, holdings of ten acres or less where little or no fruit is grown, are a worry to their possessors who are still often part-time cultivators, and a liability to the lairds. (See Fig. III,42.). The larger farmers boast about their fat cattle, excellent bulls and good crops, and live in substantial farm-houses. Some complain about the shortage of farm servants (See Fig. III,43.).

1. In Perthshire a township was said to be "A number of farms in one village, or several tenants about one plough, having their land mixed with one another."
Robertson, 1794, General View of the Agriculture in the Southern Districts of the County of Perth, p. 117.

Pitairlie. Group survival of a laird's mansion, mains farm, and dovecote.

The most ill-kept roads of Strathmore to-day are those that lead up to its mansion houses, although compared with landowners in other parts of Scotland, most of the Strathmore lairds appear to be comparatively affluent. There is however a tendency for landowners to take as many farms as possible into their own hands, so that frequently farms are either being sold to their previous tenants, or taken from them, in an endeavour to preserve family fortunes. One landowner declared that it was most interesting to hear about the theories of enclosure times, "because," she added with a smile, "we are all discussing farming again, as hard as we can."

APPENDIX - Glamis Estate in the Eighteenth Century and Glamis Estate Improvements.

Glamis Estate - Sources.

Introduction.

Glamis Estate Improvements.

Glamis Charter Room contains a considerable amount of material relating to the estate and its management, but in the time available it was impossible to go through all the relevant boxes. Moreover it was discovered that material in some of the boxes does not correspond altogether with the inventory in Register House - e.g. some rentals proved to be account books. The material selected reveals in extraordinary detail the magnitude of improvements undertaken under firm central control, or at least with full cognizance of operations. Since complete records are available for the years from 1766 to 1771, of all improvements undertaken during that time and their cost, that unusual wealth of information alone justifies adequate treatment.

Estate Plans.

1. Mains of Glamis. 1746. 715 Acres.
2. Plan for a New Disposition of the Grounds and Plantations of Glamis Castle. 1768. Acreage unknown.
3. Similar plan to 2 but merely showing policies. 1768. Acreage unknown.

4. Plan of Glamis and nearby Villages. Neither date nor acreage given.

5. Plan of the Town of Glamis. 1773. Acreage not given.

6. Plan of Reedie Farm. Neither date nor acreage given.

7. Plan of Pitpointie Farm. 1759. 130 Acres.

8. Plan of Bridgend and Clippethills. Undated. 203 Acres.

9. & 10. Two plans of Baldoukie Farm. 1771. 304 Acres.

11. Plan of Newtown of Airly. 1771. 316 Acres.

12. Plan of the Hill part of Foggarty Property. Undated. 139 Acres.

Documents from the Charter Room, Glamis Castle.

Box 30: 1. Two bundles of papers on estate improvements 1766-1771.
Receipts for money laid out in improvements by James Abercrombie:

1766-67	48	receipts
1767-68	57	"
1768-69	41	"
1769-70	74	"
1770-71	45	"

2. Book No. 3. "Improvements on the Estate".

Box 40: 3. The Factors Accounts for Crop 1773.

4. The Factors Accounts for Crop 1775.

5. The Accompts of Will Grammack as Factor for The Earl of Strathmore. Crop 1753.

Box 30: 6. Farm Papers 1715-1742. The following:
(Papers earlier than 1715 were found in this bundle).

(a) 1681. Account of Corn grown on the Mains of Glamis.

(b) 1680. Faded document with lists of farms and tenants.

(c) 1698. Account of the Growth of Thornton Farm for Crop 1698.

(d) 1701. List of Kanes and Customs payable out of the Lordship of Glamis.

(e) Undated. A Project for an addition of some Wedders, Lining and Gnes within the Lordship of Glamis.

(f) 1705. Names of the "towns" out of which women were called to labour lint and mat wool.

(g) 1708. Memorandum relative to payment for pasturage.

(h) 1714. Inventory of Livestock and Equipment of the Mains of Castle Lyon. (Huntly Castle).

(i) 1715. Various Discharges and Payments to Shearers, Workmen, Ploughmen and others.

(j) 1720. Account of the Sheep on the Mains of Glamis.

(k) 1720. Inventory of the Plough Oxen on the Mains of Glamis.

(l) 1722. Hay Cutter's Discharge. Castle Lyon. (Huntly Castle).

(m) 1734. Account of Sowing and Shearing on the Mains of Glamis. Crop 1734.

(n) 1742. Inventory of the Dairy of Glamis.

(o) 1742. Advertisement for Rouping the Mains of Glamis.

(p) 1742. Roup Roll of the Corns with the Fodder of the Growth of the Mains of Glamis. Crop 1742.

(q) 1769. Receipt for Cottars of Lindertis for their 'Sap' in Harvest.

Relative to Peat

1735 - Peats "Aprised by the Burlymen" for the year 1735.

1743 - Accounts of money paid by John Wright. Mongrieve for Casting of Ditches in the Earl of Strathmore's Mosses.

Apprisings of Peats -

1745 - Mosses of Drumglay and Cossens.

1746 - Mosses of Lentons.

1750 - Mosses of Lentons.

1751 - Mosses of Drumglay and Cossens.

Glamis Estate in the Eighteenth Century.

Page

7. Geographical Setting of the Estate.

8. Features of the Eighteenth Century Landscape as revealed by the Estate Plans.

9. Effects of the Economic Basis of the Estate.

10. The Estate Management.

11. The Estate in the Early Eighteenth Century.

11. Farm Patterns - Acreages, Ploughs and Numbers of Tenants.

18. The Laird's Share of Some Farms. Services.

20. Customs. Length of Leases.

21. The Progress of Improvements - Evidence of Estate Plans.

21. Significant Features of the Plans examined - Pitpointie Farm.

22. Bridgend and Clippethills Plan.

23. Reedie Farm Plan.

24. Newton of Airlie Plan.

24. Baldoukie Farm Plan.

25. Glamis Castle and Village - and Enclosure.

Sketch-Map of the Mains of Glamis - 1746.

Page

27. The Glamis Community and Farm Economy of the Inner Circle.

28 Glamis Plans of 1768.

28 Rental of 1773 relative to Glamis.

29. The Rentals of 1773 and 1775.

29. Statistics and Comparison with 1701 List of Customs.

30. Money Payment. Abstract of Casualties.

32. Abolition of Thirlage.

32. Leases.

33. Enclosure Transactions. Lease Conditions.

35 Allowances to Tenants.

35 Farm Acreages and Rents. Review of Rents paid.

37. Changes in Farm Tenancy shown by the Rentals.

38. Paring of small Possessions to augment Larger Ones.

39. Conclusion.

Glamis Estate Improvements.

Page

42. Introduction. Extent of the Estate.

42. General Review of the Progress of Enclosure.

43. Cost of Improvements.

43. Survey for Enclosure and Improvement.

45 The Range and Scale of Works Undertaken.

46 Drainage of Mosses.

47 Working of Marl.

49. Demolition and Construction.

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49. Costs of demolishing some Structures.

50 Construction of Farmsteads.

50 Specimen Expenses incurred in Construction of Farm Houses.

52. Enclosures. Types and Costs.

Double Ditch. Sunk Fence. Turf Fence.

Fold Dykes. Ditch, Hedge and Paling. Stone Dykes.

Cost of a Stone Dyke. Comparison with Ditch and Hedge.

56 Construction of Roads and Bridges.

Organization. Processes and Costs.

60 Plantations.

Types of Tree. Cost of Trees and the Planting of them.

62. Miscellaneous Jobs other than Ordinary Farm Work.

Work for the "Family".

63. Construction of an Ice-house.

64. Farm Work Performed by Labourers.

65. Particulars about Certain Materials, Equipment and "Imports".

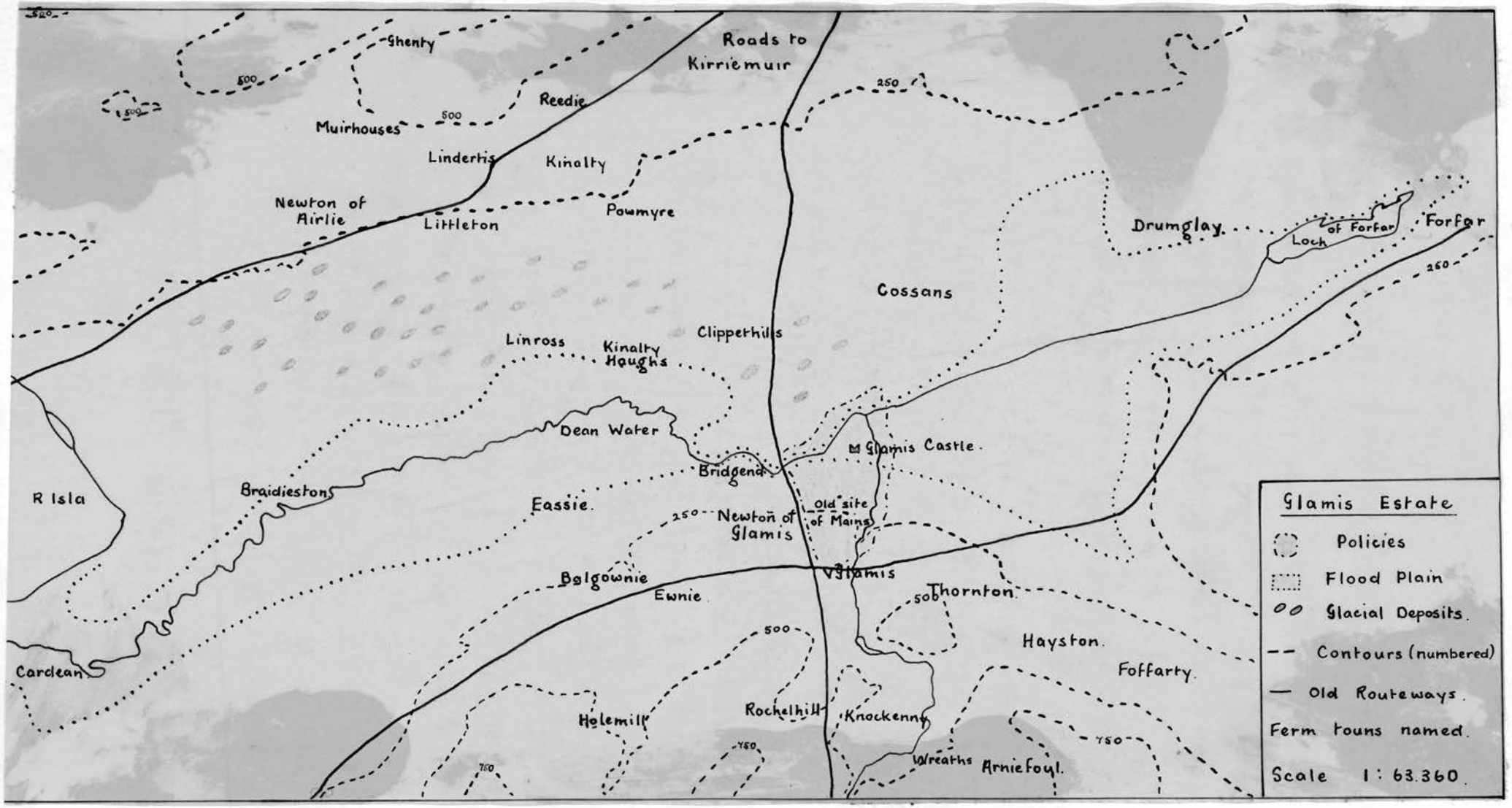
66. Work Undertaken by a Workman - Thomas Wilkie.

67. Work undertaken by Lauchlan MacKinnon, Workman.

69. Peat Economy.

70. Inventories - Dairy at Glamis. 1742.

71. Equipment of Castle Lyon (Huntly Castle) 1714.



Appendix. Fig. 1.

GLAMIS ESTATE IN THE EIGHTEENTH CENTURY

The greater part of this estate lay compactly around the Castle, in what were termed the "Narrow" and "Wider" Circles.[1] The two circles were contiguous, the inner one belonging entirely to the estate, and the outer circle little broken by alien possessions. Other scattered farms lay at some distance from the main block.

The Castle stands near the confluence of the Glamis Burn with the Dean Water, at the mouth of an old routeway across the Sidlaws. To east and west lie broad haughs of the Dean Water, and from there the ground rises southwards to a foothill ridge of the Sidlaws at some seven or eight hundred feet, and northwards to a whale-backed ice-eroded ridge rising to five hundred and fifty feet. Both ridges have the Caledonian trend from south-west to north-east (See Fig. 1.). As was the case with the immediate lands of Glamis of the eighteenth century, the ferm-touns situated close to the haughs or at breaks of slope, were asscciated with sections of haugh, slope and higher moorland in strip formation. The connection between ferm-toun and hill or ridge-section is apparent to-day in the related nomenclature. The elongated rectangular field-patterns run up the slopes to moorland, sheep-parks or plantations on the summits. A spread of drumlins to the north, and

1. Within the Parish of Glamis, the estate comprised some 6,000 acres. Old Statistical Account, Vol. 3, p.128.

especially the north-west of Glamis, complicates the pattern and explains the eighteenth century alternation of cultivable land with moss and bog, of patches of infield with those of outfield.

The estate plans of the farms of Reedie, Clippethills, Baldoukie, and Newton of Airlie reveal interwoven patches of infield and outfield, meadow land, moss and bog, indicative of sharp differences in soil. Sometimes infield land is found at some distance from the ferm-toun, and such a scattering of potentially good land is conducive to a spread of people. Settlements of cottars on the edge of moss or moorland naturally led to intakes of the poorer land and often to the establishment of independent holdings. These "newtowns" or "muirhouses" might eventually be tenanted by only one or two tenants, who replaced the larger number of cottars or subtenants. There apparently was some oscillation in the reclamation of the mosses, prior to the large-scale reclamations of the latter half of the century. For example there is reference to the "Auldtown Know" on the edge of moorland on Clippethills Farm Plan with no evidence of any existing settlement (See Photostat "). Clippethills and Bridgend were surrounded by mosses, whose names "King's Moss", "Mosstown Grounds", "White Moss", "Lady Moss", "Clippethills Moss", show their significance in the "peat economy" of the estate.

Certain features recognisable on the estate in the early eighteenth century, before the full impact of the Agricultural Revolution was felt, may be attributed to a land of fertile soils, good climate, good returns, to a powerful and wealthy laird, and moreover to an economy partly based on linen. Even the miller paid part of his tribute in linen, or at least "spynds" of yarn. It was to be expected therefore that the rural population would be relatively dense, as indeed it was. Here were tenants, subtenants or cottars, and part-time labourers who were known as workmen or "my Lord's Servants" and appear to have had little or no essential attachment to any particular farm. Later in the century there are references to the mobility of the workmen and to their being attached to more than one particular farm. For example, the receipt for 1770 (next to 28, unnumbered) has reference to men going from Glamis to Cardean Farm - a distance of over six miles - to take in the hay. An interesting receipt of 1770 may be quoted:

"Glammis 19 May, 1770. Received by me James Forbes Subtennant in Gallowhill for myself & in name of William Rodger there, James Mcquattie and James Lowson. Genty, James Ker & James McInnes in Muirhouses all Cotters on Lindertis, from William Gammack Factor for the Earl of Strathmore, One pound Sixteen Shill^{s} ster. allowed to

us for sap during the Time of Harvest last being six weeks at work at the rate of One Shilling Pr Week being Six Shillings sterling to each of us, for Shearing on that part of the farm of Lindertis which was Sown on my Lords acco^{t} for the said last cropt 1769 And therefore the same is discharged.

his
Jas) E Forbes
mark "

(Muirhouses and Genty adjoined Lindertis, but no trace of a Gallowshill there can be found). It thus appears that cottars might have dual status with obligations to the original parent stem. There are references in the rentals of 1773 and 1775 to tenants having possessions in different farms, and thus it appears that there was a certain fluidity of tenure. The control of such an estate would demand a broad general view and detailed administration. There were various officials besides the factor who directed affairs, and grieves seem to have been fairly commonly employed on the larger farms, and as moss-grieves in control of peat mosses.

The improvement of the estate proceeded under direction of surveyors, and altogether the administration must have been fairly impersonal. It appears for instance that when farms were divided into enclosures, that there was a tendency to regard them as a set of enclosures that might be split

mathematically into sectional holdings. Mention is made once or twice of farm roups, and such a method of changing tenancy would be more likely under such management, than any endeavour to give preference to the resident tenant.

Receipts of the earlier part of the century show that a check was kept on the growth of crops, and that full details were known - even to the name of each - of every beast on the farms.

The Estate in the Early Eighteenth Century.

Unfortunately there is no direct evidence of farm acreages or of the complete complement of workers on each, until the "improvement" plans and the rentals of the 1770's. Moreover five farm plans only, exist, and entries in the rentals indicate that some sub-tenants have been omitted - those paying rent to the superior tenant. There are however reliable indications that farms varied considerably in size, that some were very large and others small single tenancies. Surrounding Glamis the "inner circle" comprised mainly either such small-holdings, or farms possessed by numbers of cottars or 'acremen'. These were no doubt linen-workers who could not manage more than a few acres. The 1701 list of Kanes and customs payable out of the Lordship of Glamis shows:

Wider Circle.	11	holdings	with	1	principal tenant.
	3	"	"	2	" tenants.
	7	"	"	3	" "
	5	"	"	4	" "
	2	holdings	unspecified.		
Narrow Circle.	6	holdings	with	1	tenant.
	1	"	"	2	tenants.
	1	"	"	6	"
	1	"	"	8	"
	1	"	"	15	"
	1	"	"	21	"

Total 39 holdings with 116 + principal tenants.

Large farms of over three hundred acres were found on the estate - Glamis, Newton of Airlie, Baldoukie and Foggarty, to name four - and, in common with the rest of this district, there were clusters of possessions sharing the same name. This latter form may be partly accounted for by the absorption into the Lordship of smaller estates or baronies. The 1770 rentals for instance mention Little Cossens, Meikle Cossens, Haugh of Cossens, Pendicles of Cossens, and Gateside of Cossens, all presumably named after Cossans Castle. The process of splitting of these large units had begun before the Eighteenth Century. Before that era, the Newtons of Glamis and Airlie were in existence, Newtown of Airlie, being a farm of some 316 acres. (See photostat 7.).

The Farm of Drumglay is mentioned as one of the 'Towns' of the 'Wider Circle' in 1701, and apparently was regarded as a unit possessed by four tenants. One of the tenants paid three times the poultry and spindles of yarn of each of the other tenants (i.e. he paid 36 poultry to 12 paid by each of the other three, and 9 spindles of yarn to 3 of each of the others). Another document, undated, but of roughly the same date - "A project for the addition of some wedders and linning and Gnes within the Lordship of Glammiss"[1] - states that Drumglay has six ploughs. The above six portions of customs would appear to tally with that, and yet in 1701 there were four tenants only on a six plough possession. It may be that the more substantial tenant controlled three ploughs, or that Lord Strathmore possessed part of the farm which would be worked by his cottars. To-day there is an Upper Drumglay, Nether Drumglay, Easter Drumglay, and also the Cotterton of Drumglay. (Present acreage ?). According to the 1773 Rental Drumglay had three tenants and nineteen pendicles.

A note dated November 4th 1720, states that there were twenty-eight plough oxen on the Mains of Glamis, and according to the plan of 1746 there were 715 acres, although some of this land was ornamental or woodland and included small possessions taken in since 1701. In 1701 there were

1. Gnes may be Gres. obsolete for Grass, or Grease. Murray's English Dictionary.

twenty-one tenants in Glamis, and no doubt a similar number shared the twenty-eight plough oxen. (In the 1770's there were twenty-eight tenants in all). Possibly there were four ploughs.

The document assessing increased rent of wedders and lining cloth is of considerable interest, because it shows that the number of ploughs to a farm was a matter of some significance, as also the number of acres of infield. It does not follow, however, that consideration of ploughs, necessarily implied consideration of ploughgates. The document may usefully be quoted:-

"A notte of what wedders may be gott of additions to the Earle of Strathmore his rentall as weill within the lesser as the wyder circle of the Lordship of Glammiss.

Lykwayes the notte of the augmentation off some lining cloath.

(Significant entries)

		Lining	Weddens
Balnomon.	As first ffor every aicker in Bonemon of Infeild ane ell of Cloath wch By calculation coms to	36 ells	
Wellflet.	The possessor of the on halfe of the infeild off ane ell for each aicker according to the Scroll comes to	12 ells & a wedder	01
	James Kinnier for the oy^{r} half	12 ells & a wedder	01

		Linings.	Wedders.	
Myretoun	Gilbert Tod	04 ells		
	Rot Mitchell	02 ells		
	Francis Doig	06 ells		
Bridgend	Jo^{n} Falkns	06 ells	01	
Little Cossins		00	01	
	Isobell Reid		01	
Drumgley	six ploughs		06	
Lochmilne				Gness 12
Foggertie			02	
Haystoun			04	
Blackhill 3 tennants each of y^{m} four ells		12		
Templebanck		06		
Thorntoun			04	
town of Arnaffoull			02	
Shepherdseat		06		
Rochellhill pays on duss^{en} off lining already and ane to pay ane other		12		
Hattoun of Eassie			04	
Balgony			02	
Clippedhills			01	
Cossins			02	
The thre ploughs of Balmnebittie		18	03	
The Milne y^{t}of				Gness 6
Murehouss Da Rubhard & Jon Goodall		08		
Reidie		48	04	
Kinnaltie		48	04	

	Ells	Wedders	
Lindertas	48	04	
Littletoun	24	2	
Linross	36	3	
Newtoun of airlie	18	3	
Brydestoun	48	4	milne 06.
Cardean	48	4	
	458	62	24

Certain underlying principles have been followed but there is little uniformity.

The assessment of linen Tax on acreage of infield seems to be reasonable, but is applied specifically in two cases only. Blackhill, with three tenants pays 12 ells, 4 for each tenant, and the remaining figures are multiples of four or of six. There may also be a connection between numbers of ploughs and the wedders payable, but the list is incomplete and it is impossible to be definite. The six ploughs of Drumglay are to contribute six wedders and the three ploughs of Balmnebittie, three wedders. If the rules about four ells of cloth for each tenant and one wedder for each plough operated, then the last eight items show farms with two, three and four ploughs and three tenants to each plough. If it be taken that the tenants paying multiples of six ells were paying two ells instead of the four paid by the rest, then the three

ploughs of Balmnebittie would also have three tenants to each plough. The sole exception is the tenant of Bridgend who is to give six ells and 1 wedder. By this ruling Newtown of Airlie with 316 acres would have three ploughs and nine tenants, yet the list of 1701 mentions merely one (principal) tenant. Kinnaltie which according to the list has four tenants, by the ruling would have four ploughs and twelve tenants. Lindertis by the 1701 list has three tenants.

	Ploughs	Tenants
Lindertis by the 1701 list has three tenants		3
by the ruling four ploughs and twelve tenants	4	12
Littletown by the 1701 list has four tenants		4
by the ruling two ploughs and six tenants	2	6
Linross by the 1701 list has three tenants		3
by the ruling three ploughs and nine tenants	3	9
Brydestoun by the 1701 list has three tenants		3
by the ruling four ploughs and twelve tenants	4	12
Cardean by the 1701 list has four tenants		4
by the ruling four ploughs and twelve tenants	4	12

Drumglay certainly had, over a short period of time, a relationship of four tenants and six ploughs, and it seems likely that by the early eighteenth century the farms of this estate consisted either of single tenancies, with a single plough, or larger farms with a few ploughs and one or two tenants to each. Associated with these, however, were numbers

of subtenants, cottars and acremen.

The list of customs payable in 1701 shows that so far as these were concerned, there was commonly equality of payment amongst the principal tenants of each farm, but not always so. The number of single tenancies at that time - seventeen of a total of thirty-nine, alone shows that the spirit of runrig was dying. Some of the customs and services of runrig persisted, however, well into the eighteenth century.

In some cases the laird claimed a share of a farm, and had it worked by his 'servants'. There is an account of the growth of Thornton Farm in 1698 which illustrates this fact. "Ane Accompt of the Growth of the Rowme in Thorntowne Laboured by my Lords Servants As also, of patrick philps, Patrick Blair's and Herculles Talborts Cornds and that for the cropt 1698" In the case of both the bear sown and reaped, and the oats, four charges are given, the first charge in each case being that of the laird. For bear this is headed "First the charge of the bear of my Lords Rowme" while the other paragraphs are headed as for Patrick Philp "Charge of Patrick Philps bear". Two of the tenants had approximately equal shares of corn, but the third tenant had almost twice as much, while the Laird's portion of bear was the largest of the four, and that of oats came second to the chief tenant. In the case

of the bear, the two bolls paid to the minister, and two paid to the shearers of "my Lords Rowme", were deducted from the total crop. Of the oats, there were disbursements of three bolls to the smith and wright, six to one of the ploughmen, and one to the writer's mother for "dichting the cornds". The receipt of May 1770 on behalf of the cottars on Lindertis (see page 3) mentions wages for shearing "on that part of the farm of Lindertis which was Sown on my Lords acco^{t}." Thus it would seem that this custom persisted and that the subtenants or cottars were expected to perform certain duties on the laird's share. An advertisement for a roup of the Mains of Glamis in 1742, had a note to the effect that there were thirty-four tenants in the Lordship of Glamis who were obliged to till and harrow a whole week on the Mains each year, and also to shear thereon at any time when required, besides hay winning and several other useful services. Services were still onerous therefore as late as 1740.

A note dated 1705 mentions seven towns "in Acres$_{1}$", which apparently provided fourteen women for dressing lint and matting wool. A footnote states "This year the new town of Glames being in my Lord one hand the Acker-men and Cottars to bee called".

A number of services were rewarded with money payment

1. This may signify possessions shared by "Acremen".

or payment in kind. Accounts of 1715 show hay mowers, a herd, a ploughman of a horse plough, 'workmen', a smith, and the factor himself being paid in bolls of meal (oats). A receipt of 1722 on behalf of George Auchenwalls and partners, acknowledges payment of twenty-two pounds Scots money, one boll of meal and half a stone of cheese for cutting Lady Strathmore's hay. Later in the 1760's and 1770's groups of itinerant labourers mowed, made hay, herded, made up dunghills, etc., entirely for money payment. At this time apparently it was fairly common to encourage workmen and reward good workmanship with ale or money payment. For example (1767, 17) "To the Masons at Reidie for A founding pint, for their Incouragement, and takeing Care to build their work Strong, as the Ston is bade 5th for them selves and 1st to their Barrowmen." Similarly in 1768 (33), workmen who had completed a set of enclosures were given six gallons of ale for their encouragement.

The customs paid in 1701 included wedders, swine, geese, capons, poultry, chickens, yarn, and stones of butter. Poultry and capons were the two items most commonly contributed, the small-holders of the narrow circle paying mainly poultry or chickens, or both. No entry is made against the Newtown of Glamis and there is an explanatory note "Newtown of Glamiss formerly payed But now paying third Stouk ferm - pays no kaine[1]"

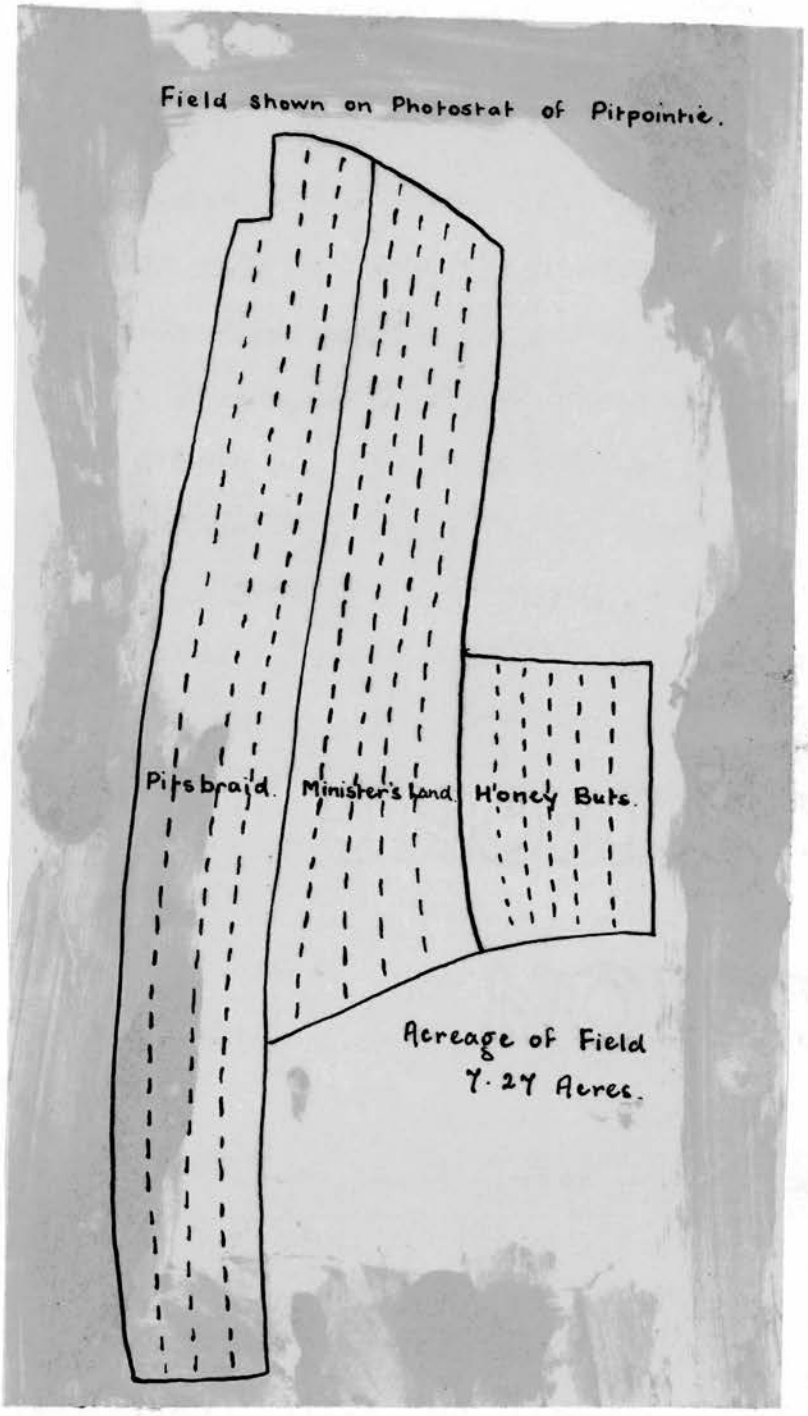
1. According to Jamieson a stouk is a shock of corn, consisting of twelve sheaves.

A memorandum of 1708 shows that money conversion was beginning to appear at that time. On the farm of Mylnfield four tenants paid respectively for the grass of the loans - a calf, half a stone of lint, forty shillings Scots, forty shillings Scots.

Prior to 1742 no information has been discovered about duration of tacks. The 1742 advertisement for the roup of Mains of Glamis, and a rent-roll dated 1753 both refer to tacks of five years. By the 1770's tacks for nineteen years, twenty-one years and longer, were common, even for pendicles.

The Progress of Improvements - Evidence of Estate Plans.

The names of noted surveyors appear on the plans of the estate from the 1740's onwards, and before that time the spirit of improvement was alive. (See photostats 6, 7 and 11). The advertisement for the roup of Mains of Glamis in 1742, declares that "most part of the Lands are Inclosed With Stone Dykes, ditch and hedge, and a great part of the Lands are already well Improven with Marle, which the Tennant may have within a Short distance of the Lands." Thomas Winter's plan of the Mains of Glamis in 1746 shows 715 acres, of which 90% of the farmland is enclosed, and presents a neat geometric pattern.



Appendix. Fig. 2.

Since few farm plans remain, it is difficult to tell whether the survey of the estate was a continuous process. Lewis Gordon is the next surveyor mentioned, the plan of Pitpointie Farm being executed by him in 1759. This farm lies near Auchterhouse, to the south of the Sidlaws. A kiln stood in the courtyard, and one enclosure is shown, but there are also oddly shaped fields showing amalgamations of sets of rigs, such as Pitsbraid, Minister's Land and Honey Buts - (see Fig.2) As so typically found in this district, a common loan links the town with the moor on the higher ground, and at the edge of the moor is the Cottar-town, inhabited by some five or six cottars. Nine acres of infield and a share of the moor were possessed by the cottar-town, which to-day is Newtown of Pitpointie, a row of cottages beside a plantation on the site of the old moor.

The farm contained some 44 acres of infield to 52 acres of outfield, 9 acres of bog and buildings, and 23 acres of muir and loaning. It is interesting to note that when moorland is excepted, the farm acreage corresponds with the size of a conventional ploughgate. Over the plan are drawn in pen and pencil the bold outlines of new fields, quite ignoring the shape of the enclosure near the steading.

There are two plans, undated and unsigned, which appear to have been drawn in the 1750's, and certainly before the era of James Abercrombie, surveyor in the 1760's. One is a

During the period when the improvement of the estate had gained full momentum, the latter 1760's and 1770's, farm plans were executed by James Abercrombie. Two farm plans exist, other than those for the neighbourhood of the castle. The plan of Newtown of Airlie, was drawn in 1771, as also was the other plan for Baldoukie in Oathlaw Parish to the north of Forfar. Newtown of Airlie (see photostat) was quite unimproved in 1771, the only neatly laid-out part of the farm being the actual fermtoun with its small rectangular yards. The large patchy fields, in places showing the lines of the old rigs comprise a total of 201 acres, if moorland be excepted. Of this, 70 acres are infield and 131 acres outfield. The Newtown itself on the edge of the 114 acres of boggy moor has offshoots in the form of cottar dwellings also along the edge, while there are some intakes of land on the moor itself. The rental for 1773 shows that on the year of the drawing of the plan, a tenant was given a tack of the whole farm for a period of twenty-one years. Although the list of 1701 shows one tenant only for Newtown of Airlie, the steading in 1771 has rather the appearance even then of a fermtoun. It may be seen from the plan that a section in the north-east corner of the farm was to be added to Moor Houses, possibly a newly created holding.

The Farm of Baldoukie showed also a loosely-knit pattern of infield and outfield, moor and pasture. Of four

cottar holdings three were on the moorland edge. Projected or accomplished enclosures were drawn on the plan. The 1773 rental shows one tenant for this farm of 304 acres.

The Enclosure of the Environs of Glamis Castle and Village.

Before proceeding with the development of the immediate lands of Glamis, some of the points previously mentioned, may be summarised.

1701 Twenty-one tenants in Glamis.

1720 Twenty-eight plough oxen on the Mains of Glamis

1742 Most of the land enclosed with stone dyke, ditch and hedge, and much of the land improved with marl. Thirty-four tenants in the Lordship must till and harrow for a week on the mains, and shear, win hay, etc. when required.

1746 "A Plan of the Mains of Glammis Containing all the Parks and Meadows Plantations Courts and Gardens as Presently Layd out and Divided." 715 acres of which 90% of the farmland enclosed.

Additional Material - 1742 - Fine pasturage on the Mains for a great number of sheep and cattle.

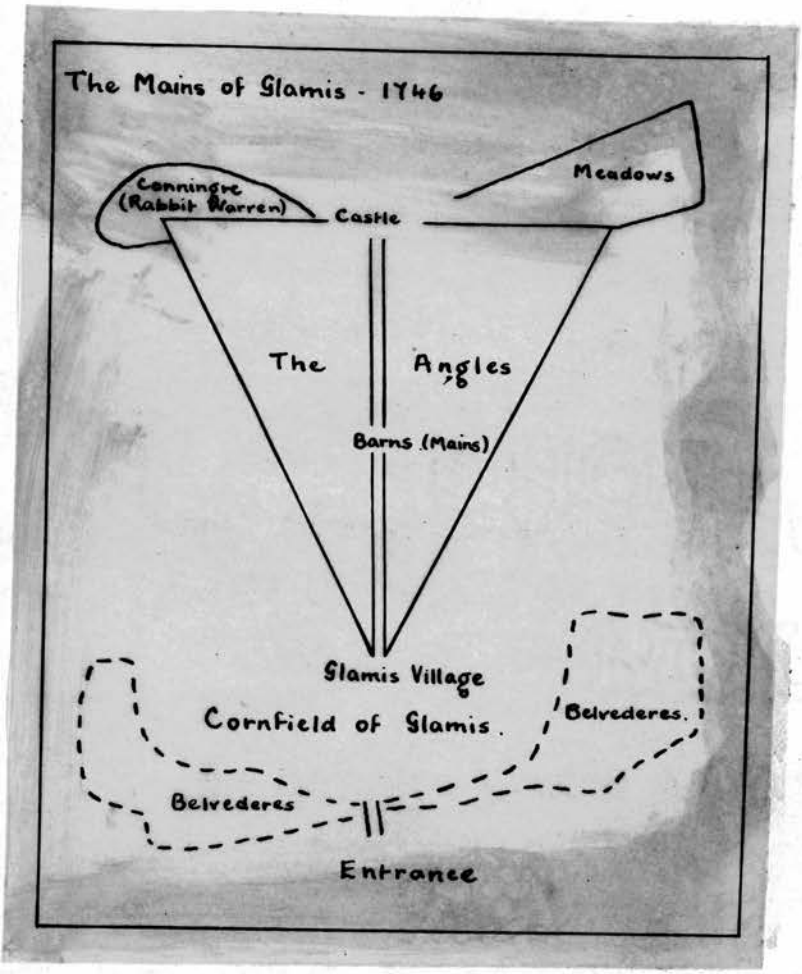
1720 Flock of sheep on the Mains comprised 308.

1717 Cows, young cows and stots at Glamis - 12, 5, 10 respectively.

1734 12 Bolls of wheat sown on Mains of Glamis.

1743 24 bolls of wheat sold to the baker in Glamis at 6 pds Scots per boll.

Although the plan of 1746, so ably drawn by Thomas Winter shows a formal enclosed pattern, especially within the Angles Park in front of the Castle, yet there are certain



Appendix. Fig. 3.

features of interest that prompt enquiry. The sketch map shown opposite gives the chief features. (See Fig. 3.)

From this it appears that the original entrance was beyond the present gate by Glamis Village, and that the immediate lands of Glamis terminated in wooded belvederes on the low hills to the South of the Castle. The Barns shown half way along the Avenue comprised the Mains farm steading. It was marked as the 'Farm-houses' in a plan of 1768. Some of the enclosures within the Angles bore names that showed the recollection of runrig, as for example "The Ten Riggs," but now, neatly enclosed they were referred to as parks. It is interesting to note that the village of Glamis lay within the boundary of the Mains, and on the near side of what was generally called the Cornfield of Glamis.

The fact that the Angles were formally laid out, and yet in farmland rather than parkland, seems to give corroboration to the impression that the Mains of Glamis embraced much more than the usual home farm. The Glamis village community lived, so to speak, within the walls, each tenant possessing some land and also contributing to the labouring of the home farm proper under management of a grieve. Moreover it is significant that of the eleven possessions mentioned in the Narrow Circle in 1701, six only remain in 1773, one of the others, Balnamoon, having become merely a house rent. Not one of the eleven possessions except Glamis itself is to be seen on the present 2½ inch

ordnance survey map. In 1701 there were fifty-three tenants in those inner circle possessions of which twenty-one were to be found in Glamis. The plan of 1746 mentions Balnamoon parks, and Newlands, etc. (not all noted) and it seems probable that in the formal lay-out of the Mains Farm some of these single or group small possessions became absorbed into the Mains. If the tenants of these possessions be deducted there remain thirty-two tenants in the inner circle, and the Advertisement for the Roup of the Mains of Glamis mentions thirty-four tenants who are bound to labour on the Mains. A document of 1680 relative to the growth of corn on the Mains of Glamis, mentions the outfield of Balnamoon and the Walflett, two of the eleven possessions, so it is possible that all of these came within the 715 acres comprising the Mains of Glamis and yet were distinct from the home farm until mid 18th century. The document about increased rent in wedders and linen cloth - (undated) mentions the infield of Balnamoon as being 36 acres and that of Wallflet as 24, let equally to two tenants. Thus it would seem that the home farm of the Mains gained a considerable acreage at the expense of the surrounding possessions.

The list of 1701 mentions one or two tenants in possessions differing from those mentioned in the list estimating increased rental of wedders and linen cloth, and no doubt at this time tacks were verbal or of short

duration. Varying customs were paid by the tenants of the Narrow Circle in 1701, and probably the possessors did vary as to the size and number of their rigs. These at the time of the 1746 plan would possibly lie in the Cornfield of Glamis.

In 1768, two plans "for a new Disposition of the Ground and Plantation at Glammiss Castle" were produced by James Abercrombie. One corresponded with the typical colourful and grandiose lay-out of parkland and policy which would befit the Seat of such a gentleman as the Earl of Strathmore. The other more practical plan in black and white, also shows the Angles now converted into parkland, and also an intricate network of fully enclosed farmland. Small fields of from four to eight acres, all hedge and tree enclosed are shown in great numbers, and presumably were to be worked from rows of small-holders' cottages. No single steading was shown except the Home Farm, and Newton of Glamis was shown as a row of smallholdings. Soon the Home Farm steading was to be moved to a new site outside the Angle policies.

According to the 1773 Rental, twenty-eight tenants of Glamis paid rents, which in seventeen cases, were less than £10 sterling, and two of which exceeded £30. One of the latter included rent of corn mill and waukmill but the other rent of £37 was for a possession in Glamis, a house and a garden. It may have been common for the smaller

holders of land to possess an infield and an outfield park. There are two references which give that impression. The entries are as follows:

	Poultry	Yarn Hasps	Money
"Glammiss. John Wightman including £1.16.7 of house rent N.B. He is now removed. James Baxter Smith has got his infield park for which he is to pay £7.15.6 and Peter Rattery has got the Outfield park for which he is to pay £2.5.2 for crop 1774 the houses lett to Sundries after Whitsunday 1774."	9	1	11.17. 3
"Bridgend. Kath^{r} Shepherd	12		10. 0. 0
Ditto (i.e. Rent) for one park of Newton Land infield £7.4.3 and for an outfield Park £1.4.7			
Inde. The outfield park Lett to John Low 1774 & the Infield possessed by Ja^{s} Badenach in Grass 1775."			8. 8. 10

The Rentals of 1773 and 1775.

Material from the 1773 Rental Book has been used, except where otherwise stated. From the later 1760's throughout the 1770's was the heyday of the estate improvements, and since with rapid enclosure, numbers of new tacks began, a two years' interval does not show much difference.

In the year 1773 the total rent of the Glamis Estate amounted to £2,735.15.5, of which £527.1.1¾ was paid in the form of casualties. A total of two hundred and sixty-four tenants paid rent, exclusive of ninety-five who paid house

rents, and in some cases appeared also in the rent lists. Of the two hundred and sixty-four, one hundred and eleven were cottars or small-holders paying rents of pendicles. Eight groups of pendicles are mentioned. The remaining hundred and fifty-three were tenants of forty-six holdings, for which some paid less than the possessors of pendicles. In the Inner Circle six only of the eleven possessions mentioned in the 1701 list of Customs payable, are still mentioned, and the number of tenants has shrunk from fifty-eight to forty. Comparison in the Outer Circle between the two dates is difficult, because in the interval there had been considerable changes and acquisitions of land. Prior to the 1773 Rental, land had been valued, and a report made by a Mr. Ainslie who may well have been the celebrated John Ainslie[1]. New farms were forthwith formed at the expense of some old possessions, although they might retain an old name.

By 1773 the money rent was paid in sterling, some of which bore the marks of conversion, with twelfth parts of a penny. There are two references to merks - a house rent in Glamis is said to be fifty merks, and a pig is valued at ten merks.

Casualties were still paid in the 1770's, in the form of capons, poultry, chickens, yarn, coals, bear and meal,

1. He drew plans for Kinnordy Estate near Kirriemuir.

poultry and yarn being the most prevalent tributes. The abstract of the rental shows the casualties as follows:

				£.	s.	d.
57	capons at $1/1^4$			3	3	4
1410	poultry at 8d			47.	-	-
46	chickens at 3d				11.	6
210	hasps yarn at $6^8/$				5. 16.	8
106	bolls coals at 2/-				10. 12.	-
122	b. 3 lip Bear at	15/-	£91.10.8¼			
2	b.	10/6	1. 1.-	92.	11.	8¼
124	b. 3 lip.					
435	b. 2f meal @	16/8	£362.18.4			
4	b "	10/6	2. 2.			
4	b. 2f lp "	10/-	2. 5.7½	367.	5.	11½
444	b. " lp			£527.	1.	1¾

In some cases conversion rates are mentioned for meal, butter, wedders etc. and the money equivalents entered with the money rent. (A wedder at 5/-). Small-holders contributed from three to six hens, and in some cases gave from one and a half to six hasps of yarn.

The 1701 list of Kane and customs payable does not mention bear, meal, or coals. When the two lists of poultry figures are compared, it may be seen that in some cases the same number of hens is contributed in 1773 by a particular farm, although there are fewer tenants in possession of it. In other cases either more or fewer hens are contributed than in 1701. With regard to coals it is of interest to note that there are references to the tenant being obliged to draw the coals from Dundee.

Thirlage.

About 1773 the abolition of thirlage seems to have begun. Three substantial tenants, in process of enclosing their farms are required to give an extra money payment "in consideration of being liberated from Thirlage". The tenant of Hatton of Bassie was to pay £1. 15. 2, and the two tenants of Balgownie were each to pay £1. 4. 8. Page 8 of Accounts Charge and Discharge, Rental 1775 has the following entry.

"Miller of Bridgetoun.
Repaid Mr. Douglas two Bolls meal yearly for Crops 1769-1775 and Interveening Years being Lord Strathmore's half of four Bolls meal allowed to the Tenant of the said Miln for liberating the Land sold from Thirlage And which the Earl is to continue to pay yearly during the Tack which subsists for 13 Years after Whitsunday 1776 And the life time thereafter of the Tenant - Converting the Meal at 12/- 1314. 15/- the first three years - at 16/- each of the next 3 years and 13/4 Anno 1775. ..... £9. 10. - "

Leases.

By this time tacks of nineteen years, twenty-one years, and even longer are frequently mentioned. One or two were for as long as thirty or thirty-six years. On the other hand the five tenants of Clippethills Farm had no tacks, but since this

was exceptional, no doubt the farm was in a stage of transition, and awaiting new "enclosing" tenants. It is apparent from the Rental that parks might be let from year to year to small-holders, such as those of Glamis, and yet a tenant of Glamis has a tack of nineteen years for a possession yielding £6. 18. 7 rent. In most cases the possessors of pendicles held tacks for twenty-one years, but one significant exception was in the case of Longbank Pendicles, where the cottars were part-time linen-weavers, and were granted no tacks.

Enclosure Transactions.

The most revealing entry relating to enclosure is that for Balgownie Farm, 1773 (Quoted page 45 Glamis Estate Improvements). Here the two tenants received tacks for thirty-six years, and were instructed to complete the enclosure of the farm within the first ten years of the tacks. The tenants were to pay at the rate of 7½% for money drawn for that purpose, and each was to pay £52. 15. 4 plus casualties of yearly rent. This case is exceptional in that there is no mention of the rent rising by stages within the period of the tack. Even for pendicle tacks, there normally were two stages of increase, one or two examples may be quoted:

Length of Lease	Rent at Commencement	Increased Rent	Increased Rent	Holding
21 years	£3.2.9 for 7 yr.	£4.3.9 (7 yrs)	£6.5.9	Lendrick
21 years	42 "	54 "	66	Haugh of Cossans.
21 years	91.8 "	115.8 "	143.8	Linross
21 years	74.8 "	111.8 "	144.8	Cardean
19 years	10 for 5 yr.	15 for 5 yr.	20	Hatton of Eassie

Pendicles.

Length of Lease	Rate at Commencement	Increased Rent	Increased Rent	Drumglay Pendicles.
21 years	£3 for 5 years	£3.10 for 9 yrs.	£4. for 7 years	
"	6.11.3 "	8.10 "	10.5 "	
"	19.0 "	1. 5.6 "	1.14.6 "	
"	18.0 "	1. 3.0 "	1.10.6 "	

Interest charged on money lent for enclosure also varied. In the case of Haughs of Cossans, it was 5% on building and enclosing, while the principal tenant of Hatton of Eassie paid

interest at the rate of 7½% on £100 loaned to him.

The 1775 Rental mentions allowances made during that period to tenants. Each of those quoted, relates to enclosure or improvements.

"John Peter in Garlsbank 6 f meal @ 13/4 towards defraying the charge of putting up new houses upon his Farm	£1.	0.	0
George Curr one Boll meal for same purpose		13.	4
John Fenton in Bridiestoun for 6 shearers which ought to have been furnished to him to cut his outgoing crop at 16/8 each	5.	0.	0
Freight and Charge of 350 Bolls Lime being part of a greater quantity promised to Alexander Nicoll Tenant in Myreside in terms of his Tack pr. Receipt	10.	12.	10
Prime Cost of said Lime pr Jo. Grants Dft dated 16 Octr 1776	14.	0.	0
John Lyon for Land taken up by Ditches Crop 1775		11.	2½
pitto for Ditches cleaned on his Farm Summer 1776	4.	8.	3½

Money Rents - Acreages - Increases, and Variations within Farms.

Rent may be compared with acreage in the few cases where acreage is known.

	Rental 1773	Rent per acre
Newtown of Airlie.	316 acres 1771. £43 + £27.4 (Casualties) = £70.4.0	4/5d.
Baldoukie	304 acres. 1771. £14.13.1 + £38.13.4 (Casualties) = £53.6.5	3/6d.
Bridgend	54 acres c 1760. £10 + 8/- casualties converted £10.8.	3/10d.

1. This farm was let in grass the next year for £30 sterling.

	Rental 1773		Rent per Acre
Clippethills.	124 acres. c 1760 £9. 9. 10 + 9/6d. casualties converted=	£ 9.19. 4	1/7d.
Claypots.	24 acres. c 1760 £3.13. 4 No casualties =	£ 3.13. 4	3/1d.
	202 acres =	£ 24. -. 8d.	

These figures may not be representative because rent would naturally depend on inherent qualities of each farm and the degree of improvement. Some farms with acreage unknown paid higher rents than those listed above. The tenant of Linross paid a total of £93. 10. , of Cardean £110. 11. 8, and three tenants of Bridiestoun gave a total of £153. 2. 5. The two principal tenants of Balgownie paid each £56. 3. 8, a total of £112. 7. 4, for a farm which was yet unenclosed. The twenty-eight tenants of Glamis gave a total of £342. 17. 6½ in 1773, and Drumglay ferm toun which once possessed six ploughs and in 1680 had six tenants, now had three and paid a total rent of £141. 10. $3\frac{10}{12}$ (£60. 3. $2\frac{8}{12}$, £44. 11. $\frac{10}{12}$, £36. 16. $\frac{4}{12}$), while the nineteen pendiclers gave a total of £33. 4. 6d.[1]

A few single possessions had extraordinarily low rents. The tenant of Knowhead paid £6. 0. 6, his money rent being 3/4d, the tenant of Powmyre £1. 3. 3, and Reish £4. 8. 1. At Lochside two tenants each paid £1. 19. 4. Possessors of pendicles might pay more rent than this. Although most of

1. In each case, casualties have been converted and included.

these cottars paid less than £4 rent, a few, especially by the end of their leases, might pay as much as £10 plus or £12 plus and in one instance £24.[1]

After 1773, a spectacular increase in rent was to take place. The writer of the Old Statistical Account states that there had been a great rise in the rents of the estate during the fifteen years preceding his account. He gives an example of a farm whose rent rose from £52 to £300 in twelve years.[2]

Cases where tenants sharing possession of a farm at this time, pay the same rent, both in money and in kind, are the exception rather than the rule on this estate, and seldom is there any apparent relationship between the rent of a tenant and that of his partner. Occasionally there is equality of payment amongst lesser tenants of a farm, but even then, seldom complete uniformity of payment from all the subtenants of the farm.

Compared with the list of Customs of 1701, in five instances the number of tenants on a farm has declined by one or two tenants:

	1701	1773	
Drumglay	4	3	
Haystoun	3	2	
Arnafoul	3	1	
Littletown	4	3	
Linross	3	1	
(Hatton of Bassie	4	2	main tenants, but 8 altogether listed).

Clippethills and Bridgend on the other hand have eleven small tenants in 1773, while three only are mentioned in 1701.

1. Plus = casualties of 3 or 6 poultry.
2. Old Statistical Account, Vol. 3, p. 128.

As with the 1701 List when compared with the 1773 Rental for the Inner Circle, a number of possessions - seven - appear for the Outer Circle in 1701 and do not appear in 1773. Some of these no doubt were sold, but within the 1773 Rental there are references to ground being taken from small possessions to be amalgamated in newly created holdings.

Gateside of Cossans - Tenant named Wm Carty whose rent 1773 was £1. 10. and 6 chickens, has this note appended to his entry "...the half of his possession fell within the Gordons plans and therefore 15/- and the poultry to be deduced out of next years rentall."

Henry Donald in the same farm paid £2 rent and 6 chickens. With reference to his rent is the following note. "N.B. the outfield being valued at 6/8d & the meadow att 8/4 fell within the plan Sent to Jas and Wm Gordons for Crop '74 and therefore to be deduced here in next years rentall."

Another entry for Little Cossans is as follows:

"Wm Steven 12 poultry. £3 money rent.

"N.B. This formerly paid £5 of yearly rent & 12 poultry But Land valued yearly att 40/- was taken off and added to the new farm in haughs of Cossans Sent to Wm Gibson."

Under "Glamis" in the rental there is a reference to land being taken from a small holder for garden ground, and at the end of the Rental is the entry:

"Garden Ground. Lett to the Inhabitants of the Town of Glammiss anno 1774.....

£6. 2. 6½."

Conclusion.

Glamis Estate was run with the efficient and impartial control of a large concern. Here was a wealthy and powerful landlord with competent officers, set over a land potentially fertile and well peopled. Ubiquitous mosses gave welcome elasticity for land improvement and the absorption of small-holders, those part-time linen-workers, or part-time workmen whose interest in the soil was only partial. This valuable reserve of labour, "My Lord's Servants", abounded within the Narrow Circle around the Castle, where His Lordship's dominance is emphasised by the fact that even Newton of Glamis was considered part of the Outer Circle. In the Outer Circle also the 'Servants' were found tilling sections of farms for their Laird, and many of these pendiclers who did part-time work on farms, roads, quarries, and other works, were manifestly more wealthy than the lesser tenants of small single tenancies. This alone upset any rigid hierarchy of the soil, and it appears that although old traditions and traces of runrig persisted into the eighteenth century, and were respected throughout most of it, that the rigid runrig laws of equal apportionment were by no means sacrosanct, and had been largely abandoned prior to the eighteenth century. Way was being made for the large farm suited to an eminently arable district, and also for the small units to be possessed by the part-time farmer, or the whole-time farmer whose wife wove linen. Although farms were commonly

shared, up to the 1770's, they were seldom equally shared, and some were so extensive that they had a similar number of tenants and ploughs, so that they may have been in effect units sharing the same name and ferm-toun.

Although enclosure of the estate catered for the small-holder, in that pendicles were strung along roadsides, and individual enclosures might be rented for long or short terms, there was also the prevalent tendency of the times, for a small possession to become smaller, so that a newly staked-out farm might become larger. The density of the agricultural population and consequent competition no doubt engendered obedience to lease clauses relative to enclosure. In such conditions, a decline in population was to be expected to result rather as a consequence of a dwindling of the linen industry than of the rapid eviction of tenants with enclosure. Smallholdings are prevalent even to-day, but the present Factor of the Glamis Estate considers the smaller ones an anxiety to the part-time possessors, and uneconomic to the estate.

As may so commonly be said, the entire eighteenth century was a transitional period for this estate, full of what to us, appear to be contradictions and inconsistencies. Commutation of casualties to money, appeared in the early years of the century, yet by the seventies, though some conversion had become habitual and almost forgotten as such, stress was still laid on payment of poultry and yarn in kind. At the end of the century, according to the Statistical Account, coals still

had to be carried for the laird. Services were onerous on the fully enclosed Mains of Glamis in the forties, and thirlage was not abolished till the seventies, and yet, early in the century certain services, although obligatory, were financially rewarded, and workmen and their partners undertook casual labour for money payment. The community spirit of the soil became a community spirit of common labouring. Enclosure was proceeding in the thirties and forties, and yet farm plans of the seventies showed completely unimproved prospects. Single tenancies were cited in 1770 Rentals and yet contemporary farm plans showed ferm-toun lay-out, and considerable cottar settlements. Though sterling money was in use by mid-century the rentals of the seventies mention payments in merks, and though wheat was grown and wheaten bread eaten early in the century, the rentals of the seventies still have a column headed with the old-fashioned name of 'bear', though doubtless it was a much-improved type of barley that was grown by that time.

The successive experts employed on the surveying and improving of the estate would leave their imprints, and the constant employment of them, from the forties onwards, shows an enlightened and progressive attitude on the part of the lairds who employed them.

GLAMIS ESTATE IMPROVEMENTS.

The Estate in Mid Eighteenth Century.

According to the Old Statistical Account, the estate at the end of the century contained some 6,000 acres (Scots) in Glamis Parish, and according to the twelve estate plans still extant, the estate was widespread, including farms in neighbouring parishes to east and west, also lands close to the Highland Line and South of the Sidlaws[1]. Much of the land was good or potentially good arable land, although the plans reveal generous patches of outfield, moor and moss, as well as infield.

The surveys undertaken before that of James Abercrombie about 1770, denote the early stages of improvement. Thomas Winter's plan of the "Mains of Glammis" in 1746 shows the land surrounding the castle ninety per cent enclosed, and that of "Pitt-Pointy" Farm dated 1759 and drawn by Lewis Gordon indicates early stages of enclosure. By 1765 the movement had gained full momentum, aided by the availability both of capital and of a large and constant labour force, recruited mainly from villagers and smallholders living in cot-towns. Commutation of services or rent to money payments and of Scots money to sterling made progress during this era, the former being in evidence at the beginning of the century.

1. Old Statistical Account, Vol. 3, p. 128.

Cost of Improvements.

The receipts of James Abercrombie for the years from 1767-1771 show that the following sums were spent on improvements:

	Pounds Sterling
1767-68	617
1768-69	328
1769-70	944
1770-71	683
	£2,572 total for four years

Allocations of money were as follows, in 1770-71.

Casting Marl	Canal to drain Forfar Loch	Drains	Dykes Fences Hedges Palings March ditches
£ 136	111	142	70

Bridges Roads	Castle (work about it)	Farm Work (Building houses) (enclosing etc.)	Wages of Surveyor
£ 46	28	108	31 (9 months roughly)

Sums are given without shillings or pence.

Survey for Enclosure and Improvement.

James Abercrombie, a duly accredited surveyor, was given the responsibility of superintending all the improvements of the estate, with a salary of forty pounds sterling per annum.

He had two assistants, one of whom, Charles Abercrombie, was paid at the rate of six shillings per week, and he was able to call on large numbers of labourers to assist in his operations.

Abercrombie's receipts for the year 1766 - 71 contain references to workmen assisting in the measuring of farms and marking out of fields. For instance in 1770 (40) there is mention of "Donald Mcdonald, assistant in laying out ye farm of Cardean, 2 days at 8d per day 1/4d." The same Donald McDonald in 1770 (37) is given the same rate of pay for mending and gravelling roads about Glamis.

It seems that enclosure divisions were arbitrarily settled by Abercrombie. Receipt 1770 (67) is headed "Men Imployed in Inclosing the Southmost field of the Hatton and Dividing it into two, and likewise two Divisions in the Inclosure lett to William Hostler being two of the 8th parts, That it is designed to be Divided into."

Incidental expenses connected with the enclosure of Balgownie farm to the west of Glamis, were as follows.

1770 (21) "James Chalmers - Assisting at ye Surveying of Ballgownie, Measuring fields etc. 30½ days £1. - 4

1770 (37) "James Hunter at Laying out Ballgownie 1 day at 8d 8d
Andrew Russell making Stakes for marking out ye Inclosure of Balgownie 1/-

1771 (45) "For Drawing paper, Cloth, and Binding for the Plan of the Farm of Ballgownie 2/10d.

The Rental for 1773 has the following entry for Balgownie. "James Mitchell for Tack for 36 years from Whits 1767 by which he is bound to inclose the whole farm with ditches and hedges The Quicks to be furnished by My Lord The inclosing to be finished within the first 10 yeare of the tack & the tenant to pay at the rate of 7½ per cent for what money he shall draw for that purpose. John Fenton for Do. of the same endurance with James Mitchell's." Both tenants were to pay casualties and £52 rent. Three cottars also were mentioned but with no injunction to enclose.

The Range and Scale of Works Undertaken.

Abercrombie's receipts enumerate every detail of improvements from taking the root of a tree out of a drain to attempting to drain Forfar Loch: from levelling old dykes and uneven ground to the construction of roads and bridges, farmsteads and enclosures, and the diversion and control of streams. From the allocation of expenditure in 1770-71, (see page 43), it may be seen that during that year more than half of the total of £683 was spent on reclaiming and fertilising land, the most ambitious venture being the draining of Forfar Loch with the chief aim of obtaining the underlying marl.

In order to tap the Loch of Forfar the Dean Water, to the west of the loch was canalized and a drain constructed to carry the level up to the level of the loch. The receipt for 1767 (3)

is headed thus "Men Imployed in Carying up the Canal or Drain to the Loch of Forfar from the Burn of Ballindarg to the Road passing by Lochmill, and Generally About 5 foot Deep. All Lett by the Jobe" The total expenditure shown on this receipt was £100. 2. 7¼. "Smaller Accidental Jobs" quoted, included cutting from a hundred to two hundred feet of a bog for four or five shillings. Most payments were made by the hundred feet, or at least by feet. Men cutting a hundred feet of the canal were paid £1 sterling for their labours, and men who had to wade deep in mud might earn as much as 18d per day (1767, 39). For a week during 1767 seventy-five workmen were employed, not all continuously on drainage operations, and the total expenditure was £7.16.8, (1767, 5). In 1767 (19) a ten foot drain is mentioned running up the middle of the great drain. Certainly a considerable proportion of the loch was drained, and great quantities of marl were dug. Treacherous holes at the west end of the loch bear witness to the removal of marl and the reversion of part to water.[1]

Drainage of Mosses.

When as many as seventy men might be employed simultaneously cutting drains through the extensive mosses, the progress of reclamation would be marked. The receipt 1767 (1) records that seventy men worked for four days, not all continuously,

1. Details given under "Working of Marl".

casting a drain through the White Moss, and for that earned a total of £10. 13. 9½. Other receipts show that the work was continued. Payment for this work varied with the nature of the terrain. Drains had to be carried up to the Mosses of Powmyre, Lochmadance, and Clippet Hills, and in the latter case, payment for the rood varied with level or rising ground from 1/- to 4/- per rood (1769 (63). In a note about the White Moss 1769 (40) payment for accomplishing 100 feet of the drains was £2. 15. -. In the same receipt there is reference to peat from 630 feet of the drain being reserved for the use of the (Strathmore) family.

Workmen were employed cleaning drains in enclosure parks. In the Aller Park thirty-three men spent some days cleaning drains, filling part of them with stones and covering them with turf. This they did each for 8d per day. Other drains were constructed to divert flood water, and local burns were regularised. Twenty-six workmen paved the bottom of the Burn of Glamis at its mouth and built secure banks.

Working of Marl.

Mid-century plans of Glamis estate show that local marl deposits were both known and utilised. At Clippethills, workmen were paid 1/- per day for casting marl (1770, 15) or 2d. per boll (1770, 29), while payments varied for work at Forfar Loch, where large numbers of workmen were employed casting

marl from under either sand or peat. On one occasion twenty-one men cast 3,281 bolls of marl from under peat and were paid at the rate of ½d per boll. (1770, 25). A penny per boll was given to workmen casting marl from under sand, during July 1770. (1770, 1), and on this occasion 17,228 bolls of marl were cast at a total cost of £81 sterling. It may be noted that the total cost of casting marl for that year - 1770 - was £136. After the marl was cast, men were employed making marl "meddings" or "medings" which presumably were mounds, perhaps of a standard quantity. Marl was apparently brought down the drain from the loch - 1771, 40 "James Lowrie for sawing 1082 feet of deals for marking Locks on ye Drain for bringing down marle". The Factor's Accounts for Crop 1773, detail sales of marl and expenses for that year:

	Total £	Expenses £	Neat Produce £
1. Marl sold from the Loch of Forfar			
31,791 bolls at 6d	794		
Less £114 expenses of which £83 for casting marl (19,986 bolls at 1d)		114	680
2. Marl sold at Clippethills			
6,634 bolls at 5d	138		
Less £54 expenses (776 bolls at 1½d)		54	83
3. Marl sold from the Powmyre			
3,990 bolls at 6d	99	-	99
Total 42,415 bolls of marl			£863 Total

No details have been discovered about the purchasers of the marl, but no doubt it was sold to all who were willing and able to cart it. Local supplies of marl would be valued by the farmer, and the receipt for 1770, 40. records payment at the rate of 8d per day being made to a labourer for searching for marl on the farm of Brediston during the time that he was assisting in measuring land.

Demolition and Construction.

Although a rather negative aspect of the estate improvements, a certain amount of demolition work commonly preceded improvements. Loose stones were an asset, so that a cairn might be more valued for its contents than its historic significance, and old stone dykes might be used in the construction of roads or new dykes. In Book 3 of the estate "Improvements" the following processes are mentioned : (Pages of the book not numbered).

(a) Levelling an old earth fence - 3½d per rood.

(b) Taking out the found of part of an old stone dyke and laying stones in heaps for a new road - 5d per rood.

(c) Levelling an old road and preparing it for planting of trees - 4½d per rood.

(d) Levelling high ridges (rigs presumably) 2½d per rood.

(e) Levelling a "large know" by removing turf, taking away four feet of earth with barrows and laying it in hollows, then replacing the turf. £1 "being a job".

(f) Hauling up fir trees by the roots - amount varied with the tree, 3½d, 4d and 5d quoted.

Construction of Farmsteads.

Since most of the materials used in building farm houses were of local origin, financial transactions were local, and the cost of transport was reduced to a minimum. The receipts contain accounts of part of the construction of two sets of farmhouses, namely the tenement of houses for William Hostler in the park south of the Hatton - presumably a new site - (1770, 10 and 30, and 2), and farm houses at Guild's Hillock 1769 (4). The following extracts are taken from both sets:

Expenses incurred in the Construction of Farm Houses. (Specimen Costs)

GH. = Guild's Hillock, 1769. W.H. - William Hostlers Tenement. 1770.

G.H. For Casting the foundations and grubbing up two ash trees. 8d. per day.

W.H. For digging 14 rods of foundations at 4d per rod.

W.H. For quarrying the stones for 18 rods 3 yds at 6/8d per rod.

W.H. To W.H. for leading stones to 12½ rods of masonry, dead work, at 6/8d per rod.

G.H. To 6 bolls of lime in shells at 3/- per boll.

G.H. To 2 bolls of slaked lime at 12d per boll.

W.H. For digging and leading 460 cart load of mortar £1.

Mason Work.

G.H. To 9 roods and 30 square yards at 20/- per rood (Barrowmen's wages included).

W.H. To 18 rods 3 yards at 13 pounds Scots per rod.

G.H. To 132 feet of "hewen" work at 4d per foot.

W.H. For 24 days of thatching - Two thatchers at varying rates, 13d, 14d and 16d per day.

W.H. For 4 days of a man laying the barn floor at 10d per day.

W.H. For 12 days of paving the stable and byres at 10d per day.

W.H. For claying the partitions and chimneys 10/-

W.H. For 16 days of a service man at 10d per day, meat and wages.[1]

W.H. To the smith in Hatton a total of £2 including,

2½ pounds of couple nails at 4d per pound.
Window bands at 4d per pair - 7 pairs.
Snecks for doors. 8d. each - 3 plus 1.
Locks for doors. 2/6d each - outer doors - 3.
Iron locks for inner doors - 1/- each - 2.
Pair of cross-tailed bands for inner doors 1/- each - 4.
5 pounds of big nails for cattle stakes. 1/8d.
For dressing the quarry tools. 2/6d.
Pairs of bands, crooks, staples, and hay bands 3/- per lb. - 6.

In the abstract for 1770 the total expenditure for William Hostler's houses for that year is shown as £37, while that for 1769 states the expense for building Guild's hillock Farmhouse to be £13. 16. 4. The receipt for the latter is shown as follows:

"Mason Work done for the Earle of Strathmore by John Smith Mason for building the Farm Houses of Guild's Hillock. 1769.

	£st	sh.	d.
Containing 9 Roods and 30 Square Yards at 20sh. pr Rood	9.	16.	8
Barrowmens Wages Included			
Of Hewen Work 132 foot at 4d p. foot	2.	4.	-
For ye Mason	£st 12.	-	8

1. A Service man was a carpenter or estate odd job man.

For Casting the Foundations and Grubbing up two Ash trees.

	£st	sh.	d.
To James Kermack 14 Days at 8d per day		9.	4
David Lighton 2 days and Robt Douglas 1 Day at 8d per day		2.	-
John Maurice 2 days at 10d.		1.	8
Another Man Imployed by Thos. White 4 days at 8d per day		2.	8
To Thos White 6 Bolls of Lyme in Shells at 3^{sh} st p Boll		18.	-
Do. two Bolls of Slaked lyme at 12d p Boll		2.	-
	£13.	16.	4

Presumably the tenant in this case was expected to pay for the woodwork and thatching himself.

The relatively high account of the smith in Hatton for £2 may be compared with the total of £13 for the mason work of Guildshillock, the former account merely comprising the cost of materials and dressing the quarry tools.

Enclosures.

Enclosures were certainly of no uniform type, and varied with the type of terrain and availability of materials, although this seems to have been a very local matter, one farm sometimes having a variety of enclosures. For example, the farm of Craneshill was enclosed partly with stone dyke, at 12/8d per rood, (1767, 65), partly with dyke and ditch at 16d per 20 feet, and partly "In Arrable Ground where there was no Swaird to bigg a Dyke", with a ditch at 10d per 20 ft. (1766(37)).

A double ditch might be used on the estate to mark the boundary march, with march stones set at intervals along it.

The double ditch might cost from 18d upwards per rood, according to the difficulty of construction, (1770, 18), while the cost of having a march stone "quarried, hewen and lettered" was 12d per stone. (Glamis Quarry 1767, 33). The cost of erecting march ditches was normally shared.

There are records of sunk fences being constructed along public roadsides, especially at the farm of Thornton. Here the sunk fence was fifteen feet wide and four feet deep. The receipt (1767, 37) cites the soil as being hard and gravelly, and records payments of 2/6d per rod to the workmen employed on construction of the fence[1], and 1/- per rod to the man who spread back the earth that came out of the fence. The wage given for backing the dykes for the sunk fence was 8d per day (1770, 53), and for clearing the foundation 3d per rod. (1768, 52). The wage given for quarrying and for leading the stones for the sunk fence was in each case 4/- per rod, so that in all it was an expensive type of barrier.

Turf fences were still being constructed in the 1770's. In December 1772 a workman built an earth fence with green turf, four and a half feet high, for 1/6d per rood (Improvements 3), and there are other references to such fences. There is occasional mention of another earthen type of dyke, as for example on the farm of Cardean (1770, 4) where a workman was employed "bigging and Cocking with whins 104 Rod of fold dykes at 6d p. R." Sheep were enclosed within these

1. Another case 5/- per rod. 1768, 52.

dykes.

Fencing with ditch, hedge and paling, was perhaps the most common method used on the estate. Twenty enclosures were made to the west of Glamis village with hedge and ditch in 1770, by the customary large number of workmen (1770, 30). 1728 rods or some 28,500 feet were enclosed for the sum of £62. 11. 1 sterling, at 6d, 7d and 8d per rood, the rate rising to as much as 1/8d where the ground was rocky. The cost of making a paling was commonly 6d per rod, while a gate might cost 1/-. Palings were erected for the preservation of the 'quick' hedges, and usually consisted of three stakes and one or two cross spars to each rod. For one cross bar payment was ¾d and for two 1d, while with the cost of sawing the wood, the total charge might be 3½d per rood (Book 3 - Improvements). Fir wood was used for this purpose. The hedges were kept in good order at the cost of ¾d per rod. Quickthorns for hedges on the estate were commonly procured from Edinburgh or Castle Lyon, although some came from Newcastle. Book 3, Improvements mentions the planting of quicks by workmen for 10d per day, and also the manuring of the hedges "To one marl middian bought from Frederick Hood att the Loch of Forfar for marling the Quicks planted one the farms of Drumglay consisting of 132 Bolls att 6 pence sterling pr Boll amounting to £3. 6 Shillings Sterling which I paid Frederick Hood pr his receipt". The ditch constructed was sometimes seven feet wide by four

feet deep, and sometimes six feet wide by three feet deep.

Stone dykes were constructed and as usual, were costly. A note on the receipt 1770, 34 for a sunk fence and road construction reads as follows. "Note that 1 Rod of Dykeing is in length 28.8 Ells for A Dyke 5 qrs high which was the Agreement, viz 5^{sh} pr Rod for bigging and as much for Quarring." (5 qrs was 1¼ yards, as deduced from context of the note. This was the cost of building a sunk fence dyke, while an ordinary self-supporting stone dyke cost 7/8d per rod, for the actual construction. The cost of a stone dyke on the farm of Craneshill may be quoted as follows. (1768(45), 1767 (12), 1769 (18), (2)).

Quarrying the stone at 5/- per rod.

Leading the stones at 5/- per rod.

* Lockspitting and evening the foundation - 7/-.

Cleaning part of the foundation - 2/-.

Building the dyke at 7/8d per rod.

\+ "Capeing the dyke with feal" at 8d per rod.

* Lockspitting - demarcating the line of some new structure, sometimes by digging a ditch.

\+ Making a turf coping for the dyke.

Thus it appears that a rod of stone dyke cost at least 18/4d for quarrying and leading of stones, construction and coping, whereas the previous account of £62.11.1 for 1728 rods of ditch and hedge (p. 12) gives an average cost of 8½d

per rod, although this may not include cost of paling and upkeep of hedges. The total cost of 47 rods of the stone dyke was £43. 17. 9½.

Construction of Roads and Bridges.

In common with the other improvements of the estate, roads and bridges were constructed under large-scale organisation, and by the labour of numbers of professional workmen. Roads came under the categories of public or thoroughfare roads, private roads within the policies, or linking a township to its enclosures, and service roads which apparently signified roads that served some particular farms. When service roads were built, there commonly is some reference to the cost being chargeable to the farms served by them. Overseers or foremen were employed to supervise work, although they too might be engaged on manual work. For example in 1769, 49 receipt there is the following entry - "For Overseeing the Countrey people at ye road through Thornton -

David Mackiddie with his time at breaking Stons
21 days at 12d per day
Robt Brand Do. 20 " at 12d " " "

Workmen sometimes worked in partnership and might be referred to as follows - 1770, 57. "Tavish Campbell & partners 9 rod at 6d p R.

Will Ogilvy and partners 48 at Do. "

Old roads no longer to be used might be levelled and transformed into strip plantations, the stones being transferred

to augment supplies for a new road. Old dykes also might be stripped to provide stone for a new road. There is for example reference to a labourer taking down part of a stone dyke, including part of its foundation and wheeling the stones in barrowloads through a bog to the approach fronting the Castle, for 4/- per rood. Book 3, Improvements.

Stones were quarried to suit the height of the section of road for which they were intended (presumably there was a camber).

1771, 42: "To David Watt for leading and Quarrying Stons to ye Roads at Thornton &c: prior to Aprile 1771.

	Rods		£.	s.	d.
Quarrying for	5¼	at half hight at 2/- per Rod		10.	6
	5½	better than half hight at 2/3 per Rod		12.	4½
	3⅓	Whole Hight at 4/- per Rod		13.	4
Leading Stons to	29½	of Whole hight at 4 sh p Rod	5.	18.	-
	26	at half hight towards ye East end at 2/9d per Rod	3.	11.	6
	17½	at half hight towards ye midle at 2/- p Rod	1.	15.	-
			£ 13.	-.	8½

Roads varied in width and depth. The greatest breadth mentioned was twelve feet, and the greatest depth (part of the same road) four feet. The construction of this road cost 2/6d per rood. Other and presumably lesser roads mentioned were 10 feet broad and from eight to ten inches deep.[1] For 8d per

1. This included the Drive to Glamis Castle.

day workmen filled carts with stones and broke them on new roads, and there is reference 1768, 10, to rods of stone for roads being broken at 4d or 6d per rod, the stones to be laid as a bed under gravel. Stones quarried for sewers, to be laid across the road cost 2/- per sewer. (1768, 9).

Ditches or sunk fences were commonly constructed by the roadside, and apparently work commonly proceeded first on one half of a road and then on the other. In one instance (1767, 36 and 44) twenty-one men were employed on the North side of a road through Thornton Farm and completed 278½ rods at 10d per rod (£11.12.11, Nov. 1767), while in March 1768 there is reference to men employed casting up a ditch on the south side of the road and forming one half of it. They completed 269 rods at 1/- per rod or 1/2d in some cases (Total - £13.19/-). Duration of work was not given.

Another reference occurs on September 1770 - (1770, 20). A workman employed on part of the Newtyle road - a through road - was paid 1/- per rod for casting a ditch and forming the side of the road (46½ rods) and was paid 6/- for levelling the middle of the road (18 rods at 4d). Another road was levelled at 1/- per rod (1769, 48). Strips parallel with the road might be levelled, the turf first being lifted, and replaced after earth had been removed.

With the exception of large new bridges at major points, bridges were made of wood, though they might have stone foundations.

Book 3, Improvements, has reference to a labourer being paid 3/- for cutting and crosscutting fir trees, mounting a bridge on a service road, and covering it with brushwood and green turf. Where there were extensive drainage operations small bridges over ditches were numerous. Receipt 1768, 11 mentions four wooden bridges with gates being constructed over drains in the Meadows of Cossens for the total cost of 14/-. Details are available for the construction of a larger wooden bridge at the corner of unspecified meadows.

1767, 32. Six men were employed for 70 days cutting, squaring and sawing wood for the projected bridge (Most at 10d per day) Cost £3. - -

1769, 31. Account of one labourer.

	£.	s.	d.
32 days at the bridge at 10d per day	1.	6.	8
4 days making pins to ditto		3.	4
2 days making malls for driving the piles		1.	8
2 days seeking the Country carts to draw the wood to ditto		1.	8
4 days putting up beds for the masons at Reedie		3.	4
5 days making a temporary bridge over the drain. White Moss.		4.	2
2 days cutting in logs the great plane tree at the Dean Side		1.	8
4 days at Guilds Hillock making scaffolding for the masons		3.	4
For making the present bridge over the White Moss		5.	6
	£2.	11.	4

(1770, 26) Reference to construction of a landing shore at a peat bridge).

Plantations.

The mellow landscape of Glamis owes much of its charm to the venerable hardwood trees that grace the parks and fringe roadsides and fields. These and other softer woods were planted with the customary wholehearted vigour and large-scale enterprise. Much of the planting was ornamental or for shelter-belts, but there was regard also for good and useful timber.

Although there is continual reference to fir trees being hauled up by the roots (3d - 5d per tree) and fir wood sawn for palings, gates, and other constructional uses, there is little mention of such wood being planted. Book 3, Improvements refers to a workman who was employed in the gathering of larch cones for seed, and there are some references to spruce, larix and Scots fir being planted. Besides beech, oak, elm, and ash, lime trees, poplars, birches, hornbeams, hollies, sweet briars and fruit trees were planted, commonly in strips, clumps, or undetailed "plantings", and seldom in single stands. Prices are given in receipt 1768, 248 for a few types of tree, viz.:

	£.	s.	d.
"To 1600 Crab Aples for ye Farm of Thornton at 2sh p hund.	1.	12.	-
To 500 Crabs Smaller Size 4oo for Reedie & 100 ye Haughs of ye Newton		5.	-
To 75 Lymes Larger Size at 6d p plant	1.	17.	6
To 20 Do Lesser Size at 3d p plant		5.	-
To 58 Standard Crabs at 1½d p plant		7.	3
To 42 Standard plums Ungrafted at 1½ p plant		5.	3
	£st 4.	12.	-

In 1767 there are references to twenty-one clumps of planting being prepared on the north side of the Dean. From January to March of that year workmen were intermittently employed cutting, sawing and preparing stoops and rails for enclosing the intended clumps (1767, 47, 56). During that time nineteen workmen completed 536 rods of enclosure palings for £9. 1. 0d and dug 5167 pits at 6d per score for £6.7.3½. The payment for digging pits varied with the type of tree to be planted and therefore the type of pit. Book 3, Improvements mentions one Alexander "Mcdonald" digging 1527 pits 3 feet wide and 14 inches deep for 1/8d per hundred pits, while 1766, 37, there is the following entry: "Pitts Dugg for planting A Slip Along the North fence of Craneshill for planting the better kinds of timber trees wiz Oak, Beech &c: between 3 and 4 feet Diameter and as deep as the Soil is good" 6,757 pits were dug at 8d per score, or 3/4d per hundred. On the same receipt there is a payment of 18/- for a workman lockspitting the fence, marking out the pits and overseeing the work, for 18 days. Twenty-eight men were employed on the operation.

Book 3, Improvements refers to oaks being planted for 8d per day, and fifty-six men engaged on a plantation of oaks and beeches, planting for 8d per day. Men were employed filling up the pits, apparently as a process distinct from the actual planting - this at 8d per day. (1767, 53).

Young plantations were hoed at a rate of from 2d to 7d

per rod. 1767, 64.

Although no doubt braes that were otherwise of little use would be planted, the selection of sites for plantations would not be obvious, since with the exception of hog land, most of the land was low-lying and potentially fertile. This explains the scattered nature of much of the woodland and the profusion of different varieties of trees.

Miscellaneous Jobs other than ordinary farm work.

A number of tasks that are given passing reference in James Abercrombie's receipts and Book 3, Improvements, have some direct or indirect significance. The abundance of the labour supply eliminated time as a factor of consequence, and encouraged piece meal allocation of work. The workmen were versatile moreover, and seemed to be able to turn their hands to almost anything. The tasks may be shown in list form.

		£.	s.	d.
1770, 32.	Angus Cameron "for Expences goeing to the Queensferry, in Quest of one Ox that was Drove off the pasture by A parcell of Cattle passing."	-	6.	-
1769, 8.	For removing a cairn of stones	-	5.	6
1769, 28.	For assisting at brewing and washing bottles. 26 days	-	17.	4
Book 3.	Fishing with a net at Forfar Loch. 1/- per day			
1767, 13.	Cartage of a man with horse or with horse and cart. 1/4d per day.			
1768, 36.	Uncovering the Quarry of Thornton			

		£.	s.	d.
1768, 36.	To James Lind and partners for 190 solid yards of earth. Wheeled off at 4d p solid yard	3.	3.	4
	(sometimes the term cubical yards used)			
Book 3.	Making a small drain part 3, 4 and 5 feet wide and part 2, 3 and 4 feet deep, 6d per rood.			
1768, 5.	Causewaying the bottom of sewers at 8d per day (across public roads).			
1768, 1.	Making 50 rods of small drains for emptying the "peat potts"	-	6.	3
1770, 27.	Lining ditches with feal.			

Work for the 'Family'

Book 3. Breaking ash, elm or 'allar' (alder) tree tops and filling carts for making charcoal - 8d per day. (On one occasion 23 men employed during a five-day period).
Wheeling dung into the Kitchen Gardens for covering asparagus and artichokes - 9d per day.
Pruning oaks and elms in the nurseries - 8d per day.
Helping with the construction of an ice-house.

Construction of an Ice-house.

This was a protracted undertaking, costly and laborious. It appears to have been of a familiar shape, like an egg partly embedded in the ground with a surface diameter of 26 feet and a depth of 21 feet. It was built during 1767; a mason and his assistant worked for c 130 days at 2/- and 1/4d, (Total about £22), per day. Fourteen men assisted them and covered the ice-house with earth, working a total of 126 days, and paid at the rate of 8d per day. (1768, 54).

Other items on the receipt 1768, 54 were :-

"To John Black, Mason for Stons for ye Doore and Covers for the passage, 62 at 1½ per foot.

To A Crackt Millston for ye Bottom, Drink to ye Quarriers for their Assistance 3/- .

To A pint of Gin to ye Men filling the house with Snow 2/6.

To Alex^{r} Tindall, w^{t} his Hors and Cart leading Stons at 1/6d p day - 28 days.

To James Lindsay in Ballnamoon Do. 5½ days .

The filling of the ice-house with snow was a considerable operation. In 1770 (1770, 55) twenty-five workmen were employed from 7th to 21st January in filling the house with snow, at a total cost of £3. 18/- . (8d per day).

Farm Work Performed by Labourers.

1770, 22. Mowing and making hay - Wm Grant and partners - 4/- per acre while Infield 3/- per acre. Cardean Farm. Making up dunghills containing 233 solid yards at ¾d per yard - (Same men and farm). At the same time they built 59 rods of fold dykes and whinned them, for 6d per rod, repairing and whinning also another dyke. Total account £10. 17. 6½.

1770 - beside 28. Reference was made to men from Glamis who came to the above Cardean Farm to take in the hay. For 2 days 24 men worked at this, and the third day, seven men, being given victuals and drink for breakfast and dinner - valued at 4d each per day. In two days they consumed 10 gallons of ale at 1/4d per gallon).

1770, 28. In autumn the above-mentioned Wm Grant and partners earned a total of £29. 15. 9 on the farm of Cardean

They earned £24. 15. 9 by ditching and £4. 12. 9 taking in and thatching the hay, as well as cutting rushes. They were helped with the hay by a further ten labourers, and worked a total collectively of 63 days at 8d per day. They were given food and drink and necessary raw materials.

1770, 4. Taking care of pasture for 17½ weeks at 1/8d per week with "Sap-money" at 3½d per week, on Cardean Farm.

1767, 16. Wheeling earth from a ditch by a roadside (Glamis Avenue) to an adjacent field for "middings".

Book 3. Planting potatoes at 8d per day.

Particulars about certain Materials, Equipment and "Imports".

"Imports"

1767, 41. 10 bolls of lime in shells purchased by Robert Wilkie, wright in Dundee for finishing the ice-house. This cost 3/- per boll with 5d for "Mettage".

1769, 32. Mention of coals termed "English coals."

1769, 66. Account from Mr. William Lyall Shipmaster in Dundee to freight of six pairs of wheels from Leith £1.4. -
Shore Dues 2. 8
Cartage to the wharf and postage of Invoice 10½
£1.7. 6½

For the Castle. Book 3 - Purchase of a beehive for 15/-

1768, 31-37. Wood for the Castle was made into stacks at 18d per stack.

Other Materials.

1768, 7. Hair for plaster - 1/6d per stone.
Plaster - 2/10d per boll.

1769, 20. Lead - 4d per sheet.

Book 3. Mortar cast for a house at 3d per solid yard.

1767, 11. Slates quarried for 10d per day.

Book 3. Shovels - From 2/- to 3/8d for a fine shovel.

1770, 29. Pick - 5/3. Yearly reparation 2/- or 1/-.

1770, 44. Water tub and bucket for mason. 4/8d.

1770, 32. Scythe with Sheath - 4/6d.

Work undertaken by a workman - Thomas Wilkie.

		£.	s.	d.
1767.	Casting a drain through the White Moss. June 15 & 16 1/2d per day		1.	9
May & June.	Constructing the canal to drain Forfar Loch, 100 feet. May & June	1.	-	-
June	Draining Forfar Loch and cleaning mouth of Glamis Burn. 4 days end of June 8d p.d.		2.	8
July.	Quarrying slates in Hill of Hayestown. 5 days mid July. 10d per day		4.	2
August.	Spreading back earth on both sides of Forfar Loch Canal. 245' at 2/6 per hundred feet		6.	1½
"	Draining the Powmyre and Lochmadance. $5\frac{1}{9}$ days at varying rates.		14.	8
"	For spreading back earth on same concern.		7.	6
"	For making "by drains" and roads.		8.	-
"	Casting a march ditch. 470 feet at 6/- per hundred and 70 at 7/- per hundred	1.	8.	10½
September.	Forfar Loch Canal operations. Various rates. 1355 Feet	1.	11.	6
November.	Forming the north side of the road through Thornton Farm. 8 rods at 10d.		6.	8
	6 months	£6.	11.	11
1768 March.	Trenching ground by a new strip of plantation. 80 rods (8d and 1/-)	2.	14.	-
May.	Enclosing part of Hatton Farm. 7 rods, 4 ells at 10d per rod		6.	4½

		£.	s.	d.
May.	Serving the masons at the Ice house and covering it with earth. 1 day at 8d			8
June.	Ditching and draining Meadows of Cossens. 50 feet at 7/- per hundred		3.	6
	Also 100 at 6/- "		6.	-
"	Causewaying the bottoms of sewers through Thornton Farm public road. 3 days		2.	-
	4 months	£3.	12.	6½

Work undertaken by Lauchlan MacKinnon, Workman.

1767				
Aug.	Deepening a ditch at Newton Haughs. 28 rods at 4d		9.	4
"	Spreading back earth on both sides of Forfar Loch Canal. 312 feet. 2/6d p hundred		7.	9
"	" 166 "		4.	1
"	Casting a march ditch. 915 feet at 6/- per hundred	2.	14.	10½
"	Casting a march ditch, cleaving wood for the 'family', setting up peats on the peat hill. His work unspecified. 1½ days		1.	-
Sep.	Making a drain at Lochmadance 42 rods at 1/6d per rod	3.	3.	-
	2 rods at 2/6d " "		5.	-
"	Making four 'inlets' to draw off water		2.	-
"	Levelling ground and spreading back earth 400 feet at 5/- per hundred	1.	-	-
	910 feet at 1/8d "		15.	2
Nov.	Securing the bottom and banks of Glamis Burn. 1 day			8
"	Enclosing Lochmadance with dyke and ditch. 47½ rods at 1/8d	3.	18.	10½
"	Making a fence 10 rods at 1/2d per rod		11.	8
"	Making pits for planting trees. 470 at 3/4d per hundred		15.	8
"	Enclosing the "Broom Ley" for planting. 20 rods at 8d per rod		13.	4

		£.	s.	d.
Nov.	Forming the north side of the road through Thornton Farm. 33½ rods at 10 p.r.	1.	7.	11
Dec.	Making a sunk fence 15 feet wide and 4 feet deep. 4 rods 2 ells at 2/6d p.r.		10.	10
"	Work on Forfar Loch Canal "wt 4 hands -Dry work"		2.	8
	Wages for 5 months shown on receipts.	£17.	3.	10
1768				
Jan.	At ice-house, threshing straw and thatching it, gathering rotten leaves of trees before the Castle and laying them in heaps. 7 days 8d p d		4.	8
March	Trenching nursery grounds. 10 rods at 8d		6.	8
"	Various Jobs - unspecified. 2 days at 8d		1.	4
June	Ditching and draining Meadows of Cossens. 296 feet 6/- per hundred		17.	9½
"	26 at 8/- "		2.	1
"	Casting peats and laying them out. 2¾ days at 8d		1.	10
July	" 1 day at 8d			8
"	Gravelling the Avenue, and roads round the Castle, serving masons, and setting up peats for the use of the family 5 days		3.	4
	" 3 days		2.	-
Aug.	Taking out a bed of gravel in the Mouth of Glamis Burn. 5 days		3.	4
"	" Also repairing roads and assisting at the Peat Bridge. 11 days		7.	4
"	With another, clearing 200 feet of drain after peats were cast.		19.	6
	Wages for 8 months shown on receipts	£3.	10.	6½

Glamis Estate - Peat Economy.

Peat was never very far away on the eighteenth-century estate. Its exploitation was well organised and administered by moss grieves, who were aided by workmen in their employ. An account of 1753 details some of the tasks undertaken by smallholders - in this case four men from Mosstown and Newtown. Payment for casting so many roods of a ditch in moss varied from four shillings and sixpence to six shillings Scots per rood. The work of winning peats cast out of the ditch was rewarded at the rate of sixpence per day (sterling), as also was the task of "redding" the ditches and turning over the peats on the peat hills. In 1768 (6) men were given eightpence per day for casting peats for the "Family" and laying them out to dry, and in 1769 (40) a man was paid eleven shillings and fourpence for acting as watchman of peats. The entry of 1770 (40) relative to workmen making a landing shore at the "peat Bridge" carries the inference that peat might be transported by water.

Peats won from the mosses might be for use of the Family, for use of tenants and others, or for general roup. Long lists survive of peats sold from specific mosses, and testified or apprised by selected apprisers of "burleymen." In 1746 there is such a list for the Mosses of Lenross, in which actual "Cartles" or cartloads were detailed. A total of

1,266 cartles cost £185. 16. 6 Scots money, and there were a hundred and fifty-one purchasers, a number of whom were not tenants of Lord Strathmore. Amongst the lists of those purchasing peats from the estate mosses are ministers and lairds as well as townsfolk in Forfar. The cartles varied from a few per tenant to well over fifty. At the end of a long list for the Mosses of Cossens and Drumglay, 1751, there is a list of "Sett Dargs": that is to say the quantity of peat which one man can cut and two men wheel in a day. One darg was charged at the rate of £3 Scots, and included in the list are such people as Lady Invereighty, Baillie Charles Webster in Forfar, John Webster merchant in Forfar, Peter Allan in Kirriemuir, and John Hill in Oatlaw, the latter places being some miles distant from the mosses.

"Inventary of the Deyarie att Glammiss taken up July 9th 1742.

Imp^{rs} Eight butter barrells whereof two of ym Little ane barrell for Churning Butter ane yearning Skeill & Milk Skeill ane Water Skeill for washing the Cogs fourteen Cogs for holding Milk ane half stone Chesser Ane Seven pound, five pound Weight four pound Weight & three pound Weight and one two pound Weight two print boards One Copper Kettle one brass pan, and two Churns three tables two Cheese Stocks Ane shell pot with Stand and Norm two lesser Steell pots a pair of tongs and

One ? Mill One timber filler."

"Inventar of the Castle Horses and Labouring graith of the Mains of Castle Lyon Delivered over by John Lyon Grinter att Castle Lyon to Thomas Henderson upon the twenty eight day of September 1714.

Imprimis fyfteen work oxen four old oxen and Three Year old Stots itt four work horses Ane old Mair and fole itt Three Corn weynds, Three pair wheels, Ane pair old wheels and the iron of Ane pair old wheels itt Three Muck Cups, Two rade Cups, a Ston Cairt, Two faggot cairts Three plowghs and plowgh graith Conform Eight Soums Two Ston weynds Nyne harrows and two broken ones Eight trodwiddies Three Iron Gaiblocks Two spaids fyve shubles, Three Grupes a Wheat firlot peck and lippie Itt: a Rooh corn firlot peck and lippie, Eight forks, Three Mands, Two oat ridles Two bear ridles Ane Reinge, a wey Sive Ane Slab ridle, and two Wheat ridles. Two long ledders and Two short ones, Ane Herp Twelve hey raiks and ane Iron-raik Three Canvasses fyve socks and Three pocks, Ane Balk and broads Two three Ston weights and a two Ston weight of Iron Itt a Ston half Ston quarter Two pound one pound and half pound weights of Ston Itt Ane Scoop

Castle Lyon, 28th September 1714 "

(Castle Lyon in now Huntly Castle, Carse of Gowrie).

Strathmore.

Estate Plans and other Documentary Sources.

A total of eighty-two estate plans, pertaining to sixteen estates, has been examined and catalogued, and on the whole makes a most interesting and representative collection. The index map shows the distribution of plans, with the exception of some which it was impossible or inexpedient to represent. For certain areas, more than one plan was drawn, and in other cases it was deemed unsuitable to insert a projected design for the improvement of policies, or a commonty, such as Foffarty, whose exact position is uncertain.

In the case of some of the erstwhile large estates, such as Glamis, Airlie, Balnamoon, and Southesk, a tantalising handful only remains, of scattered plans. Other difficulties and disappointments were met with in the field. Poor bus services in country districts made some visits necessarily of short duration, and in other cases the host or hostess was too interested or too sociable to allow much time for the work of recording. The large size of some of the plans made it impossible to borrow them. In the case of the plan of Hallyburton (66½" x 73") the factor was obliged to lend a helping hand, while at Glamis furniture had to be cleared so that plans might be spread on the floor. One collection of plans was examined on the cement floor of a garage, on a windy day.

Considerable variation of types and conditions of plan was found, even within estate collections, but all the plans

catalogued were legible, and few were in poor condition. The names of eminent surveyors, including Thomas Winter and John Ainslie, frequently appear on the plans, and most of them have a workmanlike appearance. The scale most commonly employed is that of an inch to four chains (Scots), but some are drawn to three or even two chains to the inch, and a few showing large areas are drawn on considerably smaller scales.

Although the estate plans are of sufficient interest value to merit detailed investigation of the region, it is felt that there is not a large enough number to enable generalisations to be made without reference also to contemporary documents and books. Of the rent rolls and other documents studied, the most interesting concerned the estates of Glamis, Kinnordy, Guthrie and Guynd. These may be summarised as follows:

Glamis - See Appendix for complete list.

Bundles of papers on estate improvements including detailed receipts for the years 1766-71. Book relative to Estate Improvements.
Rent Rolls for 1753, 1773, 1775, and List of Kanes and Customs 1701.
Farm Papers, 1715-42 and numerous miscellaneous papers from 1681 to 1769.

Kinnordy (Kirriemuir) (Uncatalogued) - A notebook relative to late eighteenth and early nineteenth centuries, including lease stipulations, information and complaints about multure payments; carriage of marl, and cost of it: size of certain farms and rights of possessors, information about cost of lime: advice by a Mr. George Kirkcaldy about farm management and economy.
Rental of 1799 for Kinnordy and Invercarity. Services payable.

Guthrie (East of Forfar) - Rentals of 1761, 1804 and 1820. Four legal petitions dated between 1775 and 1794, relating to procedure against tenants or landlord, and the payment of stipend.

Guynd (Carmyllie) - Notebook of 1793 about enclosing and improving of the estate. Sundry information about enclosures, crops, division of runrig lands, etc.

Balnamoon (N.W. of Brechin) - Miscellaneous information from papers dating from 1760 to 1895 (maps). Mainly information about rents, casualties and leases.

Notes taken from Rentals of Turin - 1768 - Lour House.

Southesk - 1762)
Brechin and Panmure Barony - 1765) Kinnaird Castle
Brechin - 1809)

Panmure Estate - 1764 - Register House

" " - 1672 and 1699 - page 412 et seq. The Land of the Lindsays. Andrew Jervise.

ANGUS COUNTY AND NEIGHBOURHOOD

	Estate	Parish	Plan	Surveyor	Year	% Enclosed	Interest Value
1	Glamis	Glamis	Mains of Glamis	Thos.Winter	1746	90	A+
2		Glamis	New Disposition for neighbourhood of Glamis.	Jas.Abercrombie	1768	100	B+
3		Glamis	New Disposition (Policies only).	Jas.Abercrombie	c1768	Policy 100	B-
4		Glamis	Another proposed lay-out of policies and nearby villages.	?	?	100	B
5		Glamis	The "Town of Glammiss"	Thos. Allan	1773	?Mainly gardens	B-
6		Glamis	Bridgend and Clippethills.	?	c1760	0	B+
7		Glamis or Kinnettles	Commonty of Foggarty.	?	?	8	B
8		Airlie	Newton of Airlie	Jas.Abercrombie	1771	0	A--
9		Airlie	Reedie	?	c1760	Enclosure projected 0	A-
10		Auchterhouse	Pitpointie	Lewis Gordon	1759	Tentative 7	A--
11		Oathlaw	Baldoukie	?Jas.Abercrombie	1771	?Transition	A--
12		Oathlaw	Baldoukie	Jas.Abercrombie	1771	0	A--
13	Airlie	Airlie	Auchindory	Wm.Panton	1773	1	A-
14		+Alyth	Barony of Loyal	?	c1800	100	B
15		+Alyth	Inverqueech, Shanzie, Cult, Blackbridges: contours of Upper Balloch.	Wm.Panton	1772	0	A
	(+Perthshire)						
16		+Alyth	Alyth Town: (Pitnacree Lands)	Wm.Panton	1786	-	B+
17		+Clunie	Barony of Clunie	Lewis Gordon	1770	0	A-
18		+Clunie	Barony of Clunie	Wm.Panton and Alex.Stevenson	1789	5	A

19		Cortachy and Clova	Cortachy and Kinalty	Wm.Blackadder	1813	20% of arable 1d. 20	B+
20	(Kincardine)	xFettercairn	Balbegno	Wm. Garden	1771	10	A
21	Pearsie	Kingoldrum	East Balgray, Bridgend and Carroch Wood.	Thos.Ogilvy	1843	Enclosures partially unimproved 100	B-
22		Kingoldrum	Muirpearsie and Beakonhillock.	Thos.Ogilvy	1843	100	B
23		Kingoldrum	Pearsie	Thos.Ogilvy	1834	100	B-
24	Kinnordy	Kirriemuir	Invercarity (Inverquharity)	J.Ainslie	1798	10	A--
25		Kirriemuir	Invercarity (Inverquharity)	Copy from above by Wm.Blackadder	1818	c 20	B++
26		Untraced	Lands of Migby, Stoneybank, etc.	Jas.Galloway	1811	100	B+
27		Arbroath & St.Vigeans	Grange of Conon	Jn.Holden	1768	No fields shown 0	A--
28	Pitscandly	Rescobie	Pitscandly	Thos.Allan	1792	60	A--
29	Lour	Forfar	Mains, Parks and Policies of Lour	John Home	1766	85	B+
30		Forfar	Lands of Lour	John Home	1800	70	B++
31	Middleton	Kirkden	"Lands of Friack"	John Home	1766	0	A
32		Kirkden	"Farm of Pitmuie Mill"	Jas.Webster	1813	Perhaps 100	B+
33		Kirkden	"Cotton of Gardyne"	?	?c1830	100	B+
34		Barry	"Ravensbay Crook-hill and Millhead"	Jas.Webster	1810	100	B
35		Barry	Ravensbay (Ravensby)	Jas.Webster	1811	c100	B
36		?(Perhaps part of Carnoustie)	Gardynestown	Jas.Webster	1810	100	B+
37	Gardyne	Kirkden	Lands of Gardyne	Wm.Ireland	1771	80	A-
38		Kirkden	Lawn and Garden of Gardyne Castle	J.Henderson	?	?Parkland and Garden	C
39	Montreathmont Moor	Guthrie, Kinnell, Brechin, Aberlemno, Farnell.	Montreathmont Muir	Wm.Blackadder	1819	Divisions shown	B

40	Guynd	Carmyllie	Design for Improvement of Guynd	T.White	1799	Projected	B
41		Carmyllie	Policies (no title)	Thos.Allan	1797	100	B+
42	Southesk	Maryton	Design for Improvement of Old Montrose	Robert Robinson	1764	Policy 100	B-
		Maryton	Fullerton	Jas.Abercrombie	1767	100	B+
		Brechin & Farnell	Policies of Kinnaird Castle	?	Before 1805	c 80	B
43	Balnamoon	Menmuir	Balnamoon Farm	George Robertson	1813	100	B
44		Menmuir	Design for Improvement of Balnamoon	Richard Stephens	1812	Park or Woodland 100	B
45	Stracathro	Stracathro	Stracathro	?	1792	60	B++
46	Panmure	Edzell	Index Plan of the Nether Farms of the Parish of Edzell.	Wm.Panton	1766	-	B+
47		Edzell	Farm of Holl	Wm.Panton	1766	0	B
48		Edzell	Sheerstripes	Wm.Panton	1766	1	B
49		Edzell	Dallbog	Wm.Panton	1766	0	B+
50		Edzell	Mergie and Blairhead	Wm.Panton	1766	0	B+
51		Edzell	Wood	Wm.Panton	1766	0	B+
52		Edzell	Denhead	Wm.Panton	1766	0	B+
53		Edzell	Bonsagart and Little Tullo	Wm.Panton	1766	20	B+
54		Edzell	Cowiehill	Wm.Panton	1766	0	A--
55		Edzell	Meickle Tullo	Wm.Panton	1766	0	B+
56		Edzell	Mill of Dallbogg	Wm.Panton	1762	0	A-
57		Edzell	Westside	Wm.Panton	1766	0	B+
58		Edzell	Sandyhillock	Wm.Panton	1766	0	A--
59		Edzell	Strowan	Wm.Panton	1766	0	A-
60		Edzell	Burnroot	Wm.Panton	1766	0	B++
61		Edzell	Mill of Invereskandy	Wm.Panton	1766	0	B+

62	Panmure (cont.)	Edzell	Braehead, Upper Dalsuper, Nether Dalsouper and Dooryhill.	Wm.Panton	1766	0	B+
63		Edzell	Bonhard	John Panton	1766	0	B+
64		Edzell	Mains of Edzell	Wm.Panton	1766	0	A--
65		Edzell	Slateford (Edzell)	Wm.Panton	c1766	0	B
66		Lethnot	Index Plan of the Netherlands of the Parish of Lethnot	Wm.Panton	1767	-	B+
67		Lethnot	Drumfurris, Newbigging, Townhead and Mill of Lethnot.	Wm.Panton	1766	0	B+
68		Lethnot	Bogtown and Oldtown.	Wm.Panton	1766	1	B+
69		Lethnot	Tilledovie	Wm.Panton	1766	0	B+
70		Lethnot	Wittown	Wm.Panton	1766	0	B++
71		Lethnot	Clochee	Wm.Panton	1766	1	B+
72		Navar	Wester Tilliarblet	Wm.Panton	1766	0	B+
73		Navar	Easter Tilliarblet	Wm.Panton	1766	0	B+
74		Navar	Wester Blairno, Easter Lightney, Wester Lightney, Glebe of Navar.	Wm.Panton	1766	2	A-
75		Navar	Glebe of Navar	Wm.Panton	1767	100	B+
76		Navar	Easter Blairno	Wm.Panton	1766	0	B+
77	Hallyburton and Pitcur	Kettins & Longforgan Perthshire	Hallyburton and Pitcur.	Mackenzie Stobie	1784	65	A-
78	Burn and Arnhall	Fettercairn Kincardine	Burn and Arnhall	Geo.McWilliam	1819		B++
79	Middleton	Angus	Mains of Middleton	Jas.Abercrombie	1756	75	A-
80	Pitskelly	Barry	Pitskelly	Jas.Horne	1842	100	B-